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Dispute Over Cisco Flaw Sparks Criticism, Debate

Vendor muzzles researcher after initial router exploit disclosure

BY JAIKUMAR VIJAYAN

Cisco Systems Inc.'s attempts last week to stop an IT security researcher from discussing a hack into its router software evoked criticism from some users and analysts, along with calls for more information from the vendor about the issues surrounding the flaw.

ONLINE

Read more IT security coverage at our Web site. QuickLink x1000

The dispute between Cisco and the researcher also reignited the debate on responsible practices for disclosing vulnerabilities and how vendors should respond to security problems.

The controversy erupted after Michael Lynn, who until last week worked at Internet Security Systems Inc., made a presentation at the Black Hat USA conference in Las Vegas. Lynn detailed a way to shut down a Cisco router by taking advantage of a known and already patched flaw in the vendor's Internetworking Operating System software.

Both Cisco and Atlanta-based ISS tried to stop Lynn from giving the presentation and even compelled Black Hat's organizers to destroy CDs and rip out more than 30 pages containing Lynn's slides from thousands of copies of

Cisco Flaw, page 14

Delays, Added Costs Threaten University's ERP Apps Rollout

Project management, testing cited as issues

BY MARC L. SONGINI

After having missed a go-live date in April because of problems in project management, software testing and other areas, the University of Wisconsin is reassessing an over-budget ERP rollout that has so far cost it $25 million.

The university was working to install human resources, payroll and benefits management applications from Lawson Software Inc. to replace a 30-year-old mainframe system, with an eye on cost savings and improved ease of use. But active work on the project was effectively put on hold in

ERP Rollout, page 45

FDIC Warns Finance Firms On Spyware

Some IT managers say they're already taking precautions

BY LUCAS MEARIAN

Spyware is being recognized as a major security threat across the financial services industry, prompting warnings from the Federal Deposit Insurance Corp. and analysts about the risks posed by the information-seeking software.

IT managers such as Matthew Speare, chief information security officer at M&T Bank Corp. in Buffalo, N.Y., said last week that they

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LOST, STOLEN OR STRAYED

The mundane task of transporting computer tapes to storage facilities is suddenly a hot topic, after some highly publicized mishaps. Gary H. Anthes reports on ways to beef up security – and they aren't cheap.

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Without a VPN.
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"At Nissan, we expect to save at least $135 million annually thanks to the efficiencies that Windows Server 2003 and Exchange Server 2003 are helping us achieve."

Toshihiko Suda
Senior Manager, *Nissan Motor Company, Ltd.*

Make a name for yourself with Windows Server System. An upgrade to Microsoft Windows Server System made it possible for 50,000 worldwide employees at Nissan Motor Company to have more secure remote access to their e-mail and calendars from any Internet connection, without the hassle and expense of a VPN. Here's how. By deploying Windows Server 2003 and Exchange 2003, not only did Nissan IT meet the CEO's demand for better global collaboration, they expect to save at least $135 million by streamlining their messaging infrastructure. To get the full Nissan story or find a Microsoft Certified Partner, go to **microsoft.com/wssystem**

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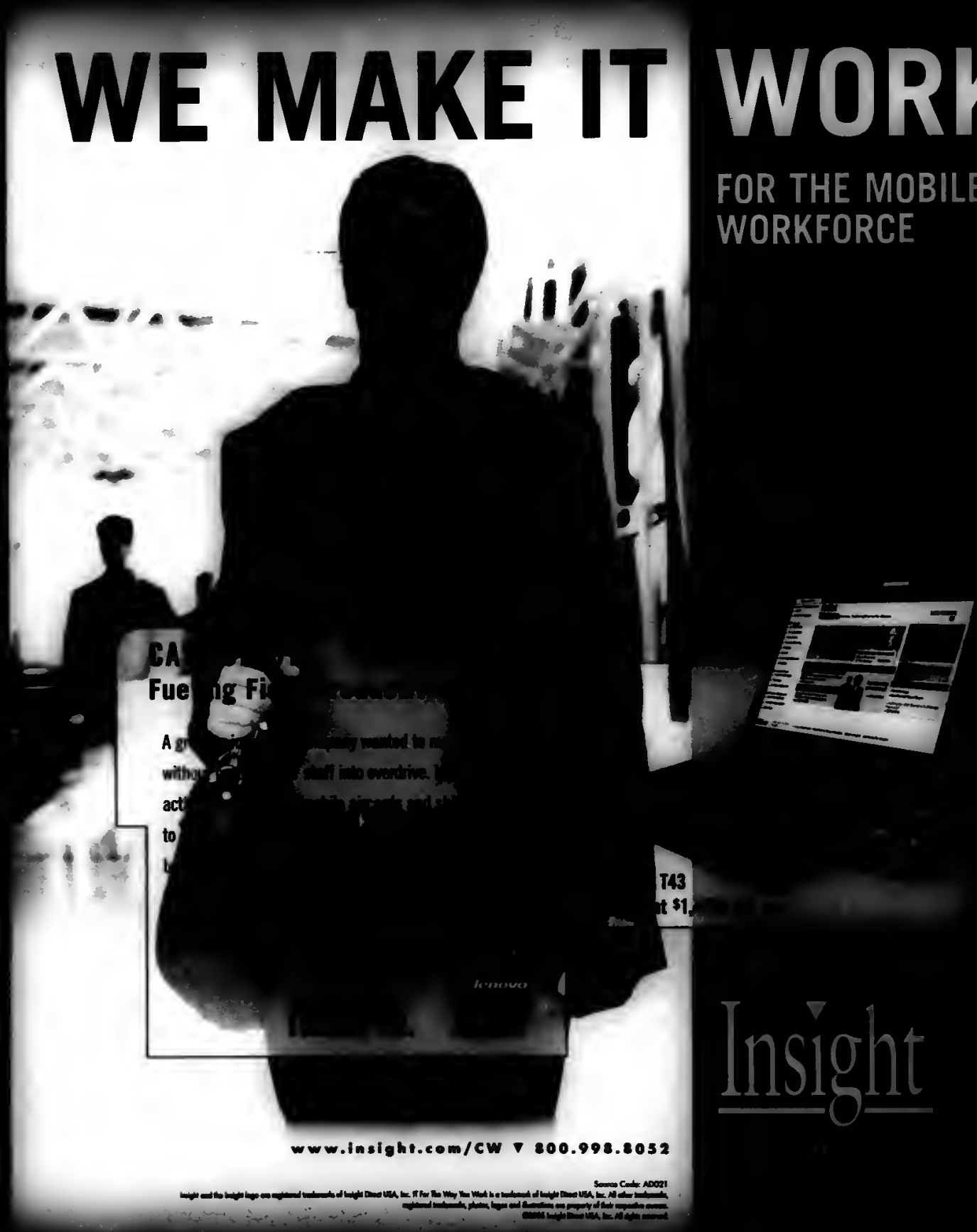

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Healing Power

In the Technology section: Intelligent sensors, demand response systems and other emerging technologies could be components of a self-healing electric grid that's expected to be developed over the next five to 10 years. **Page 21**

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Are you in a Web surfing rut? Check out some of these favorites from *Computerworld* staffers, and freshen up those bookmarks! QuickLink nl0000

The Billion-Dollar Storage Error

IT MANAGEMENT: Cataphora's Elizabeth Charnock has advice for keeping your company from being caught in a legal dilemma over archived data. QuickLink 00001

How to Safeguard Offshore Data

SECURITY: Paul Henry of CyberGuard returns from visiting overseas facilities with advice about how to secure outsourcing operations abroad, including tips on protecting customer data. QuickLink 00000

Lock Down That Mac

MACINTOSH: Security should always be on the minds of systems administrators, says columnist Ryan Faas, who takes a look at physical security and discusses ways to lock down your workstation — and the data on it. QuickLink 00004

Blogs and Blogwatch

Computerworld editors and IT professionals blog every day, offering opinions, tips, commentary and more. Don't know where to start with blogs? Don't have enough time to sort through them? Every morning, IT Blogwatch identifies the best new *Computerworld* blog posts as well as others around the Net. QuickLink nl0000

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AT DEADLINE

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Shortage of Mainframe Skills May Give IT Execs Gray Hairs

BY PATRICK THIBODEAU

Art Louise is like many mainframe professionals. He has three decades of experience with systems and programming languages such as Cobol and assembler that remain critical in data centers but aren't the skills of choice for most new IT professionals.

The generational gap will likely be obvious at the Share user group's conference later this month in Boston. And Louise, who manages mainframes at New York-based Group Health Inc., said last week that businesses like his may soon have trouble finding workers with mainframe skills.

The need to integrate third-party software with upgraded mainframe operating systems and custom applications will be one of the big issues facing companies, Louise predicted.

"There aren't a lot of people who are going to school for Cobol," he said. "Basically, it's a trickle-down issue."

IBM and other vendors also have concerns about a lack of mainframe know-how.

"I personally feel that there is a skills shortage out there," said Bill Miller, a vice president and general manager at Houston-based BMC Software Inc. "Colleges and universities in the past 10 years have not been delivering to the marketplace people with assembler skills, especially."

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But the Chicago-based user group and other mainframe backers may be facing an uphill fight luring many young IT workers to the technology.

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The makeup of the faculty at Northern Illinois may reinforce that perception, she noted. Many of the professors who teach mainframe classes are of baby boomer age or older, said McIntire, who added that she is worried about replacing them when they retire.

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Microsoft Plans Premium Editions of Windows, Office

AT MICROSOFT'S annual financial analyst meeting last week, top executives disclosed sketchy plans to introduce premium versions of products such as Windows and Office in hopes of driving more revenue growth.

CEO Steve Ballmer said the company expects to introduce a client-level enterprise edition as part of "the Windows Vista generation," as well as a higher-end version of Office. He compared the plan to the introduction of the professional edition of Windows, which he said drove "literally billions of dollars" worth of incremental revenue growth over the home version of the client operating system.

Ballmer added that Microsoft is thinking about a new Office Server concept that would have premium client-access licenses associated with it, as well as a premium client-access license for Windows Server.

"It's premium value to premium price," Ballmer said. "We're of course going to keep the current product set around, and we're going to have to prove to our customers that they want the premium value."

Lee McCarter, director of IT infrastructure and operations at Hawaiian Electric Co. in Honolulu, said he hopes the premium products will be included as part of the utility's enterprise agreement with Microsoft.

"Microsoft keeps talking about the partnership they're creating with us, and I'd like to think they'd invite us to that party," McCarter said.

"Our enterprise license is coming up this year, and we've got to evaluate the value of what we're paying," he added. "They have to continue to add value to it, as opposed to us just renewing automatically."

– Carol Sliwa

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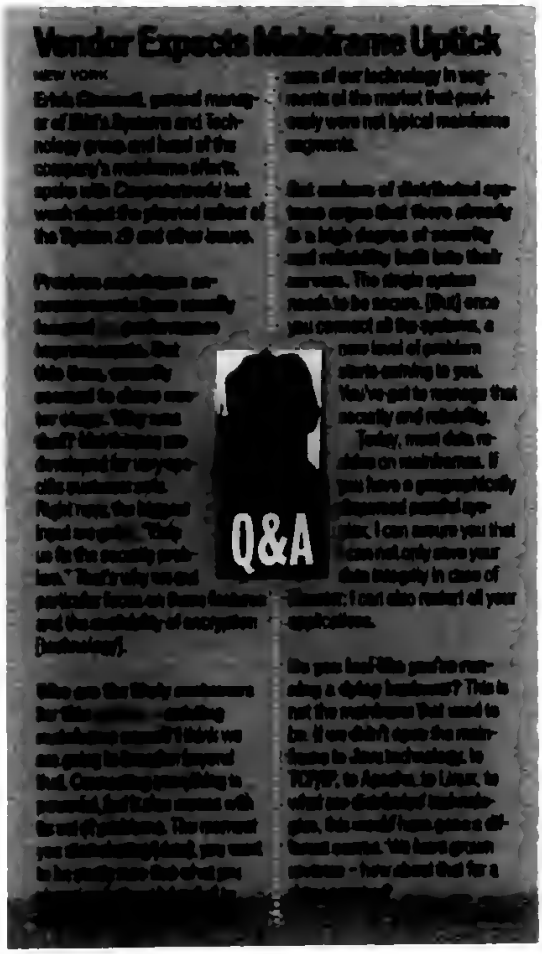

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IBM's System z9

BRIEFS

Cisco to Buy Vendor Of Network Tools

Cisco Systems Inc. has agreed to pay about $97 million to acquire Sheer Networks Inc., a maker of tools for managing complex networks. San Jose-based Sheer's products include Sheer DNA, which can be used to create real-time, virtual networks. The 100-employee company will become part of Cisco's Network Management Technology Group. Cisco said it expects to complete the deal by the end of October.

Alliance Publishes Grid Security Paper

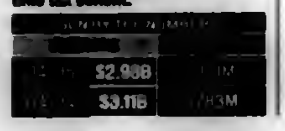
The vendor-backed Enterprise Grid Alliance moved to accelerate the adoption of grid computing among corporate users by publishing its first paper on the security needs of grid technology. The paper is intended to help end users, vendors and standards groups identify the risks associated with the use of grid computing for big business applications.

HP, Altiris Unveil Jointly Built Tools

Hewlett-Packard Co. and Altiris Inc. have unveiled a pair of jointly developed client management software bundles. HP and Lindon, Utah-based Altiris had delayed the releases from early last month to avoid being overshadowed by the steady stream of other HP product and restructuring news in recent weeks. HP resells Altiris' life-cycle management software under an earlier deal.

Sun Reports Profit, But Sales Fall Again

Sun Microsystems Inc.'s quarterly revenue continued to decline in its fourth quarter, but the company posted a profit thanks to a one-time tax benefit.



ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL

MATTHEW FAULKNER

Dual-Core Chips Can Trip Up . . .

. . . programmers in the debug phase of application development. "You still tend to think of threads as distinct tasks," says James Reinders, director of marketing and business development at Intel Corp.'s software products division. That's a mistake, he

warns. Reinders, a former supercomputer programmer, notes that threads — those parts of a program that can be run in parallel — must be debugged individually. "Yet they aren't completely independent of each other," he says. For example, threads may share a microprocessor's cache memory, but you need to make certain that they don't overlap their calls to the cache and pull out the wrong data. Since Intel projects that 85% of servers shipped by the end of 2006 will be based on dual-core processors, threaded software will likely become the norm. Reinders says you can migrate existing apps to run better on dual-core systems by using dual-core-aware compilers, such as Intel's brand-new 9.0 family. The compilers can scan your code and tell you where the best places are to thread an application. Pricing starts at $399.

Network tool aims to help secure . . .

. . . your applications. Despite their best efforts, developers don't always succeed in protecting their code from malicious intruders. Erik Giesa, vice president of product management and marketing at F5 Networks Inc., says the Seattle-based company is developing technology that lets IT managers apply network security policies to guard apps. For example, F5's technology would prevent a program from revealing details

about an application environment to hackers via error messages that they might trick the software into sending. The as-yet-unnamed product will be shipped as part of an appliance and added to the company's Big-IP switch by year's end, Giesa says.

Open-source rating service is nigh . . .

. . . for corporate IT. Nick Halsey, vice president of sales and marketing at SpikeSource Inc. in Redwood City, Calif., says there is "no objective way" to evaluate the plethora of open-source technologies available on the Internet. For example, Joaquin Ruiz, SpikeSource's vice president of product marketing, claims

that there are nearly 375 content management projects alone listed on SourceForge.net, a Web site for open-source developers. Later this month, SpikeSource, Intel and Carnegie Mellon University's Center for Open-Source Investigation will unveil the Business Readiness Rating, a service that evaluates how well a given technology will work in the corporate world. Ruiz says the ratings won't take a one-size-fits-all approach — they'll account for different business factors, such as a company's size and the industry it's in. The rating service should be ready for use by the end of the year.

In addition, SpikeSource, which certifies the compatibility of a variety of open-source stacks [QuickLink 53783], today will begin certifying custom combinations of open-source code. The company will configure and test open-source software and provide automated installation tools at no cost. To assure the continued compatibility of your components, you can subscribe to the company's update service for an annual fee of $995 per server.

Search tool for IT infrastructures is . . .

. . . due to be released next week. Splunk Technology Inc.'s Personal Server software runs on a Linux system but can collect data from configuration, log and database transaction files plus other data repositories on computers throughout your network. Michael Baum, CEO of San Francisco-based Splunk, says these files are the ideal place to conduct a root-cause analysis when apps fail, but they're too big and cumbersome to peruse manually. Splunk's product "dynamically finds relationships between events and the data," claims Baum. A workgroup version will ship next month, and an enterprise version is due in the first quarter of 2006. Pricing hasn't been set.

Forget searching for keywords and . . .

. . . consider looking for concepts. Dallas-based Engenium Corp., which sells its Semetric software to other vendors for inclusion in their products, is planning a September release of a version that corporate users can license directly. CEO Dave Chaplin says Semetric uses "semantic analysis" to connect concepts in ways that keyword searching can't match. For example, a hiring manager seeking a Java developer might not find candidates who describe themselves as object-oriented programmers. Chaplin claims that Semetric 4.0 understands the conceptual equivalence of the two. Pricing starts at $25,000. **56034**

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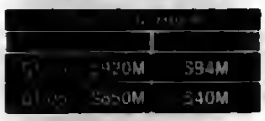
BRIEFS

CA to Cut 800 Jobs Despite Profit Rise

Computer Associates International Inc. plans to cut 800 employees, or 5% of its workforce, in a restructuring aimed at saving $75 million per year. CA also said its first-quarter profits more than doubled on an 8% sales increase.

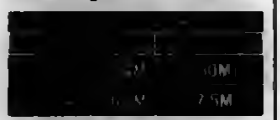


Indian ISP Buys IT Firm in Bermuda

Videsh Sanchar Nigam Ltd., a Mumbai, India-based telecommunications and Internet service provider, has agreed to acquire Teleglobe International Holdings Ltd., a Bermuda-based provider of wholesale voice, data, IP and mobile signaling services, for $239 million. The purchase of Teleglobe is part of a bid by VSNL to expand beyond India. VSNL closed a deal to buy Tyco International Ltd. for $130 million last month.

Siebel Posts Loss As Licenses Decline

Siebel Systems Inc. confirmed the grim news it gave shareholders early last month, reporting that second-quarter software license sales dropped 20% from last year, contributing to another net loss.



Microsoft Adds Web Mapping Tool

Microsoft Corp. launched a new online local search tool that goes head to head with an offering from Google Inc. MSN Virtual Earth is similar to Google Maps, providing both street-map and satellite views, as well as driving directions. By year's end, Microsoft plans to expose Virtual Earth as a Web service for organizations to use on their Web sites.

High-Tech Tools Help Monitor Shuttle Safety

Camera and laser sensors provide flight engineers with images, data

BY TODD R. WEISS

NASA SCIENTISTS and engineers are using specialized high-tech components to painstakingly inspect the space shuttle *Discovery* for any possible damage caused by a piece of insulating foam that broke away from the craft's external fuel tank during last Tuesday's liftoff.

A black-and-white camera, two laser sensors and a 50-ft. boom extension that was added to the shuttle's robotic arm are allowing NASA's flight engineers to peruse every square inch of *Discovery*'s outer surface for flaws that could endanger its return to Earth.

NASA officials said Friday that the shuttle doesn't appear to have been damaged by the 2.5-foot-long piece of foam. But continuing inspections were being done to firmly rule out such a scenario.

Adding to NASA's concerns was the apparent loss of a 1.5-in. section of one of the thousands of ceramic heat shield tiles on the shuttle. That situation is also being reviewed using images captured by the new sensors. The equipment was added after the space shuttle *Columbia* was lost on re-entry in February 2003 as a result of launch-related damage from a piece of foam that smashed into the leading edge of a wing and created a hole.

The exterior inspections and evaluations of *Discovery* were being conducted as part of the mission's original schedule, said Debbie Rahn, a spokeswoman for the space agency. "We want to understand the state of the vehicle before the crew returns," she said.

The boom extension was built by the Brampton, Ontario-based space missions group of MacDonald, Dettwiler and Associates Ltd., using spare parts from the original robotic arm. Herb Goettmann, an engineer at MDA, said the laser sensors and camera positioned at the end of the extension can be operated by the shuttle crew to collect detailed images of tiles and protective panels. The data is then downloaded to engineers on Earth.

The extension doubles the length of the shuttle's robotic arm, and the sensors and the camera each have a particular use. For example, NASA's Intensified Television Camera includes an adjustable zoom lens and can take pictures in lighting conditions ranging from very dim to bright.

One of the other devices is a laser dynamic range imager that was designed and built at Sandia National Laboratories in Albuquerque. NASA said the LDRI produces 2-D and 3-D image data as the sensor scans the shuttle surface. In 3-D mode, the scanner colors images like a Doppler weather radar image, with each color representing the depth of surface irregularities.

The third device on the boom is a laser camera from Neptec Design Group Ltd. in Ottawa that scans the shuttle's exterior and records data that can be used to create an image model of its surface. The camera uses the reflection of laser light beamed against the surface to measure the depth and other characteristics of imperfections, said Iain Christie, Neptec's director of research and development.

NASA administrator Michael Griffin pointed to the new technology in a statement announcing that the shuttles won't fly again until the foam-loss issue is resolved. "This is a test flight," he said. "The cameras worked well. The foam did not." 55868

Pentagon's IT Upgrade Still at Risk, GAO Says

BY LINDA ROSENCRANCE

The U.S. Department of Defense has spent $318 million trying to develop an IT architecture that supports modern business systems. But four years into the project, it doesn't have much to show for its efforts, according to a report issued last week by the Government Accountability Office.

The report, written by Randolph Hite, the GAO's director of IT architecture and systems issues, said that the Pentagon's enterprise architecture is incomplete, inconsistent and not integrated. It labeled the department's business modernization efforts as at risk.

According to the GAO, the Defense Department has 4,200 systems that support a variety of business functions. The systems environment is overly complex and error-prone and is characterized by little standardization across the department, multiple systems performing the same tasks, and the same data stored in multiple systems, the report stated.

Hite said those problems remain despite the fact that the agency has spent billions of dollars annually since 1995 to operate, maintain and modernize its business systems.

In a written response to the GAO, Defense Department officials concurred with the report's recommendations, including the immediate disclosure of the department's architecture progress and plans to congressional committees.

Hite noted that the Defense Department hasn't adopted previous GAO recommendations. Those included the establishment of an effective governance structure, the development of program plans that spell out measurable goals and outcomes, the creation of an effective configuration management system, the development of a well-defined architecture that describes current business and technology environments, or a transition plan.

"Despite six [business enterprise architecture] releases and two updates, DOD still does not have a version of an enterprise architecture that can be considered well defined," the GAO report stated.

In a telephone interview, Hite said the GAO is required by law to issue an annual report to Congress on the department's business systems modernization efforts that lets lawmakers know what is working and what isn't.

Hite pointed to a recent change in leadership at the Defense Department — Thomas Modly was named deputy undersecretary of defense for financial management, and Paul Brinkley was named special assistant to the undersecretary of defense for business transformation — and said he hopes the new officials will act on the GAO's recommendations. 55849

Faster Wi-Fi Approach Wins Broader Support

Vendors to merge rival proposals for 802.11n spec

BY MATT HAMBLEN

Warring factions of vendors reached an agreement in July to cooperate on development of the next high-speed wireless LAN standard, and IEEE standards officials last week said that the planned joint proposal could be ready for an initial vote in November.

The three factions said at an 802.11n task force meeting held last month in San Francisco that they are "working together to create a single merged proposal," according to a short statement from the task force that was issued by the Institute of Electrical and Electronics Engineers Inc.

Making Progress

The proposed standard is due to be made available at an 802.11n meeting in Orange County, Calif., during the week of Sept. 18 and should be ready for review and a possible vote by the entire 802.11n working group in November, said Nancy Vogtli, the working group's publicity chairman.

The progress was welcomed by Frank Hanzlik, managing director of the Austin-based Wi-Fi Alliance trade group. Hanzlik described 802.11n as a "turbo-charged" version of the existing Wi-Fi standards because it would quadruple effective data throughput over WLANs to up to 100Mbit/sec. at a range of 300 feet.

> **"We want to ensure we can continue to grow without replacing equipment."**
>
> **CRAIG RICHARDVILLE,** VICE PRESIDENT OF INFORMATION SYSTEMS, CAROLINAS HEALTHCARE SYSTEM

That kind of throughput would make 802.11n "fast enough for enterprise networking," Hanzlik noted. For example, companies could use the technology to send high-quality design drawings and video files over internal Wi-Fi networks, he said.

But Craig Richardville, vice president of information systems at Carolinas HealthCare System in Charlotte, N.C., said he was concerned about the potential cost of upgrading to 802.11n-based equipment.

Richardville described the promised speed of 802.11n as "positive." But, he said, "we want to ensure we can continue to grow without replacing equipment. I would hope as new standards evolve that we'd probably stay current with minimal investment."

Carolinas HealthCare has more than 500 wireless access points running 802.11b/g that serve its 14 hospitals, and Richardville said the company plans to double the number of access points over the next 18 months.

Hanzlik said that aside from faster throughput, 802.11n will rely on using several antennas instead of one per access point — a technology called Multiple Input, Multiple Output. MIMO takes multiple snapshots of the same signal and combines them for a more accurate result, which is desirable for applications such as video over Wi-Fi.

According to IEEE documents, the merged proposal will be created by three groups: TGn Sync, which is backed by Intel Corp.; wWise, which is supported by Texas Instruments Inc.; and Mitmot.

Hanzlik said he expects 802.11n to be formally ratified and published as an IEEE standard in the first quarter of 2007. **55852**

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GLOBAL

An International IT News Digest

Video Monitoring System Can Check for Bombs

TOKYO

OKI ELECTRIC INDUSTRY CO. last week announced a video surveillance system that can issue alerts when it detects suspicious behavior or intrusions. The system could prove useful for beefing up security at airports, factories and other locations, Tokyo-based Oki said.

The company's VisualCast-SS system uses so-called behavior-recognition software developed by ActivEye Inc. in Briarcliff Manor, N.Y., to watch for 35 parameters. When the system spots something it deems suspicious, it can sound an alarm or send an e-mail alert to security staffers.

The system could be set to detect the movement of, say, a car or a human climbing a fence. It also has ability to detect items of a particular size. So it could, for example, monitor an area for objects the size of a briefcase that are left unattended for a specified amount of time. "We don't call this a 'bomb alert' function, but yes, it can be used for that sort of thing," said an Oki spokeswoman.

■ PAUL KALLENDER, IDG NEWS SERVICE

IBM Starts IT Camps For Aboriginal Youth

TORONTO

IBM CANADA LTD. last month began to reach out to young people in the country's aboriginal communities in hopes of interesting them in pursuing IT careers. One program launched by IBM is a series of three-day camps where young people are exposed to fields such as robotics and Web design and learn to do things like take apart a PC and put it back together.

"The goals are to create a positive experience for aboriginal boys and girls at a critical point in their educational evolution," said John Longbottom, the IBM Canada executive in charge of the program. "We want to get them excited about math and sciences so they [are] positioned for IT careers over the longer term."

■ VANESSA HO, ITWORLDCANADA.COM

Third Senior Executive Leaves India's Wipro

WIPRO LTD., India's third-largest software and services outsourcing company, last week announced the resignation of Rich Garnick, the company's head of sales in the Americas. It was the third departure of a senior executive from Bangalore-based Wipro in the past two months. Garnick, who said he's leaving to spend more time with his family, will be replaced by P.R. "Sekar" Chandrasekhar, who currently heads Wipro's European operations. Chandrasekhar will relocate to the U.S. and become chief executive of operations in both Europe and the Americas.

The latest changes came less than one month after Vivek Paul, the company's Silicon Valley-based vice chairman and CEO, announced his departure [QuickLink 55405]. In June, Wipro also lost Raman Roy, who headed the company's business process outsourcing unit. ● 55824

■ SUMNER LEMON, IDG NEWS SERVICE

Compiled by Mitch Betts.

Briefly Noted

France Telecom SA last week said that it will extend its presence in Spain by acquiring 80% of the country's third-largest mobile operator, Amena, for 6.4 billion euros ($7.7 billion U.S.). Amena is the retail brand name of Retevision Movil SA in Barcelona.

■ PETER SAYER, IDG NEWS SERVICE

Turkish Airlines Inc. in Istanbul plans to use business intelligence software developed by MicroStrategy Inc. to analyze sales and flight data stored in its 1TB data warehouse, the Reston, Va.-based vendor announced late last month.

Vivo, the largest wireless operator in Brazil, has deployed a voice-over-IP network to connect its five major call centers in an effort to improve routing, reduce wait times and virtually eliminate lost calls, vendor Nortel Networks Corp. said last week. São Paulo-based Vivo is a joint venture of Telefónica Moviles SA in Madrid and Portugal Telecom SGPS SA in Lisbon.

GM Seeks to Ease Licensing Burdens

Signs deal to buy Sun's middleware stack

BY PATRICK THIBODEAU

General Motors Corp. is adopting Sun Microsystems Inc.'s Java Enterprise System middleware stack in what is the largest deal yet in Sun's effort to sell the software based on its per-employee licensing model, the two companies said last week.

GM, which is a large user of Sun systems as well as those developed by many other vendors, is already using middleware components from Sun, including its portal technologies and Web servers. But with this agreement, GM said it's changing the way it buys Sun software and opening the possibility of broader use.

Moving to the full middleware stack gives the automaker improved licensing management and addresses the need to deal with multiple maintenance contracts, said Fred Killeen, director of systems and chief technology officer for GM's Information Systems and Services Organization. The change will also help GM — which has about 320,000 full-time employees — reduce the number of methods it now uses to count licenses.

"You count the licensing five different ways, depending on which product it is — one is per object, one is per named user, one is per CPU. In a lot of ways, this simplifies the administration for us," said Killeen. "It actually simplifies a lot of things for us."

Sun charges an annual fee of $140 per employee for the full suite of JES products, but GM likely paid much less, analysts believe. Neither Sun nor GM would disclose the pricing of the deal.

Most independent software vendors license their products on a per-CPU or per-named-user basis. With the GM deal, Sun said its novel pricing approach now gives it 1 million users for its middleware stack. But some analysts don't expect a groundswell of further adoption.

For one thing, there are many users that don't want every Sun offering in the stack. "If you want to do a best-of-breed, it's tough," said Martin Schneider, an analyst at The 451 Group in New York.

Although some users may find that Sun's bundling and preintegration approach makes sense, the "downside is it's pro-Solaris" and more likely to be of interest to existing Sun users such as GM, said Dennis Byron, an analyst at IDC.

Judith Hurwitz, an analyst at Waltham, Mass.-based Hurwitz & Associates, said she thinks some companies have trouble with Sun's per-employee pricing model as a means of determining a product's value.

Sun's work with Microsoft Corp. to improve product integration was another factor that helped the vendor win the GM deal. Last year, Sun and Microsoft signed a multiyear agreement to end their antitrust battle and work on product integration.

GM relies heavily on products from both vendors, and Killeen said the automaker expects to get "better integratioo between Sun and Microsoft infrastructures and reduce that kind of investment we need to make in doing custom integration." ● 55862

Correction

LAST WEEK'S PAGE ONE story about the shutdown of the Interex user group ("Interex, HP World Hit by Finance woes") incorrectly reported the months in which member Kees den Hartigh wrote letters to Hewlett-Packard Co. officials to express concerns about a new conference that HP will hold in September. den Hartigh, who was program co-chairman of Interex's HP World conference, sent an initial letter to the vendor in early March. He sent a second letter directly to HP CEO Mark Hurd on July 7, nine days before Interex closed its doors and canceled HP World.

School System Uses Governance Apps to Stretch IT Staff

Chicago supports more schools on a dwindling budget

BY THOMAS HOFFMAN

The Chicago Public Schools (CPS) department is making use of a hosted IT governance system to help it support a growing base of end users amid continuing budget cuts.

Beginning next month, the natioo's third-largest public school system will provide 30 independeot charter schools with the option to purchase technology services from the school district, which already supports IT operations for 640 schools, said CPS CIO Bob Runcie. The school system's Office of Technology Services secured its first charter school customer a few weeks ago and is signing up others.

Meanwhile, over the past two years, the CPS IT services group has had to cut its annual operating budget from about $36 million to $29 million. "And the only way to do that is to be very disciplined about prioritizing the [IT] workload and projects," said Runcie.

Saving Time and Money

Last September, the school system began using a hosted Web-based IT governance and portfolio management system from Mercury Interactive Corp. in Mountain View, Calif. The Mercury IT Governance Center, which is installed on some 600 desktop machines via Java applets, enables the school system's IT staffers to catalog, prioritize, assign and track thousands of IT maintenance and project requests. CPS has many legacy systems and a high volume of maintenance work that needs to be dooe by an IT department that consists of just 200 full-time workers and 150 consultants, said Runcie.

There are other benefits as well. Because it's using a hosted software approach, the IT department is saving about $200,000 annually compared with the costs of installing and maintaining the IT governance software itself, according to Runcie.

The use of IT governance and portfolio managemeot techniques "is of massively high value for institutions — public or private — that face continual budget pressure," said Howard Rubin, a senior adviser at Gartner Inc. who is also professor emeritus of computer science at the City University of New York. IT governance and portfolio management tools let organizations align IT projects with their strategic goals using fact-based analysis, said Rubin.

CPS hasn't yet quantified the returns it has garnered from the $100,000 it's paying annually for the hosted software service, said Runcie. But the software has provided the IT department with the ability to catalog and track work requests against the deployment of IT staffers, including the number of hours that its consultants are logging against various projects, he added.

The school system's IT governance council, which is made up of high-level executives, uses the tool when it meets every other month, to develop business cases for all proposed IT initiatives, said Runcie. "So if Department A wants to put in a new library-automation system, we can use the tool to ID the cost, the alignment with our strategic initiatives, the implementation strategy, the payback period [and] ROI," he said. 55842

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Continued from page 1

Cisco Flaw

the conference proceedings.

But Lynn, who initially agreed not to make the presentation, resigned from ISS Wednesday morning and proceeded with his talk, prompting Cisco and ISS to secure a federal court injunction preventing him from further spreading the information.

At a press conference Thursday, Lynn said his decision was prompted by his desire to show the world that Cisco routers — which power a vast portion of the Internet infrastructure — are susceptible to devastating attacks. The theft of some IOS source code last year lent urgency to his decision to go public with the information, Lynn noted.

Cisco said it would release a security advisory to "clarify confusion" about the router flaw. But Cisco and ISS defended their actions, saying that Lynn's presentation was based on incomplete research.

"Both companies agreed that further research was needed to better inform customers" of the issues involved, said Cisco spokesman John Noh. He added that while Cisco supports the work of security researchers, "we believe that Lynn's presentatioo contained proprietary information that he illegally obtained" by decompiling source code.

Questions on Approach

The manner in which Cisco handled the dispute raises questions, said Christofer Hoff, director of enterprise security services at Western Corporate Federal Credit Union in San Dimas, Calif.

"I'd like to understand that if this isn't a security vulnerability but more an issue of protecting [intellectual property] rights, why were ISS and Cisco going to allow the presentatioo in the first place?" Hoff said. "If it is a vulnerability, what is the extent of the issue? What are they going to do about it? And when are they going to do it?"

Researchers often disclose security flaws and exploits for self-promotional reasons. But Cisco's evasive actions are likely to attract more hacker attention rather than less, said Lloyd Hession, chief information security officer at BT Radianz, a New York-based network services firm. "If you want to get your company onto CNN, this is one way of doing it," Hessioo said, adding that be wants Cisco to provide more details on the flaw and the exploit described by Lynn.

> **"If it is a vulnerability, what is the extent of the issue? What are they going to do about it? And when are they going to do it?"**
>
> CHRISTOFER HOFF, DIRECTOR OF ENTERPRISE SECURITY SERVICES, WESTERN CORPORATE FEDERAL CREDIT UNION

> **"Both companies agreed that further research was needed to better inform customers [of the issues involved]."**
>
> JOHN NOH, CISCO SPOKESMAN, REFERRING TO THE NETWORKING EQUIPMENT VENDOR AND ISS

"The horse is out of the barn at this point," Hessioo said. "What we would expect from them is oo different than what we would expect from Cisco when any type of new vulnerability is discovered. We need a clear and concise explanatioo from them about the circumstances under which it can be exploited."

Though Lynn's preseotatioo dealt with an already known hole, it provided the hacker community with the knowledge needed to exploit it successfully, said Thor Larholm, a senior security researcher at PivX Solutions Inc. in Newport Beach, Calif. "The main point of this disclosure is that there will be a lot more focus on IOS as being an exploitable system," Larholm said.

Cisco's actions reek of highhandedness, said Bruce Schneier, chief technology officer at Counterpane Internet Security Inc. in Mountain View, Calif. "It's downright scary if you are allowed to argue that negative things about your company can't be disclosed," Schneier said.

But researchers do need to be responsible when making disclosures, Hoff said.

"It's a slippery slope between full disclosure and responsible delivery [of information]," he said. "As a consumer, I'd like actionable intelligence as soon as I can get it, but I would like to have a solution to the problem, not just a shrinking [exploit] window."

The actions of researchers such as Lynn are "reprehensible, bordering on the criminal," said Dennis Treece, director of corporate security at the Massachusetts Port Authority in Boston. "If be published a paper telling every burglar how to compromise a certain alarm system or get through a certain type of door because of some manufacturing defect, be would be equally out of line." **55863**

Continued from page 1

Spyware

had already begun taking steps to better protect their systems before the FDIC issued a set of guidelines on July 22 for avoiding spyware downloads.

Speare said he noticed a performance drop among the 15,000 desktop computers at M&T as spyware and adware infiltrated systems in recent years. But without measurement tools or enterprise-class spyware blockers, be was unable to quantify the full extent of the problem and prevent further infiltrations.

For the past six months, Speare has been beta-testing Symantec Corp.'s AntiVirus Corporate Editioo v10, which includes protection against adware and spyware. The antivirus software quarantines about 90% of the spyware coming through M&T's firewalls, Speare said. But often, the spyware that Symantec's tools don't catch forces the bank's IT staff to reinstall software images on end-user PCs.

"These programs are very sophisticated and well written," Speare said. "Unlike viruses that are more of an ego-driven piece of software, there's a financial model around spyware. [The authors] make money off of it. And anything a criminal can make money at, he's going to do."

A Growing Problem

Jered Green, a senior systems engineer and lead security assessor at Miami Lakes, Fla.-based InfoSight Inc., which does network penetration testing for corporate clients, said the spyware problem is becoming worse.

"The people with bad intent are realizing how powerful spyware can be," Green said. "I'd say better than 80% of the PCs I've scanned have significant spyware on them." In many cases, laptops and handhelds get left out of corporate protection plans, be noted.

The FDIC warned banks that spyware can be a conduit for hackers to get into their systems and collect sensitive data. "It is critical that banks stay vigilant about the risks involved with this malicious software and take appropriate action so that they and their customers do not fall victim to it," Michael Zamorski, director of the FDIC's Division of Supervision and Consumer Protection, said in a statement.

The guidance from the FDIC spells out the risks associated with spyware and recommends actions that financial institutions can take to mitigate the problem both internally and on the computers that online customers use (see box, left).

For example, the FDIC suggested the use of multifactor end-user authentication technologies and said that banks should warn customers about the risks of using public-access computers.

Jim Hochstatter, vice president of technology at Ulster Savings Bank in Kingston, N.Y., said that until a year ago, the bank kept separate networks for core processing and external communications, offering computer kiosks to employees who wanted to surf the Web. But with the increase in Web-enabled applications for customer use, it was inevitable that spyware would become a concern, he said.

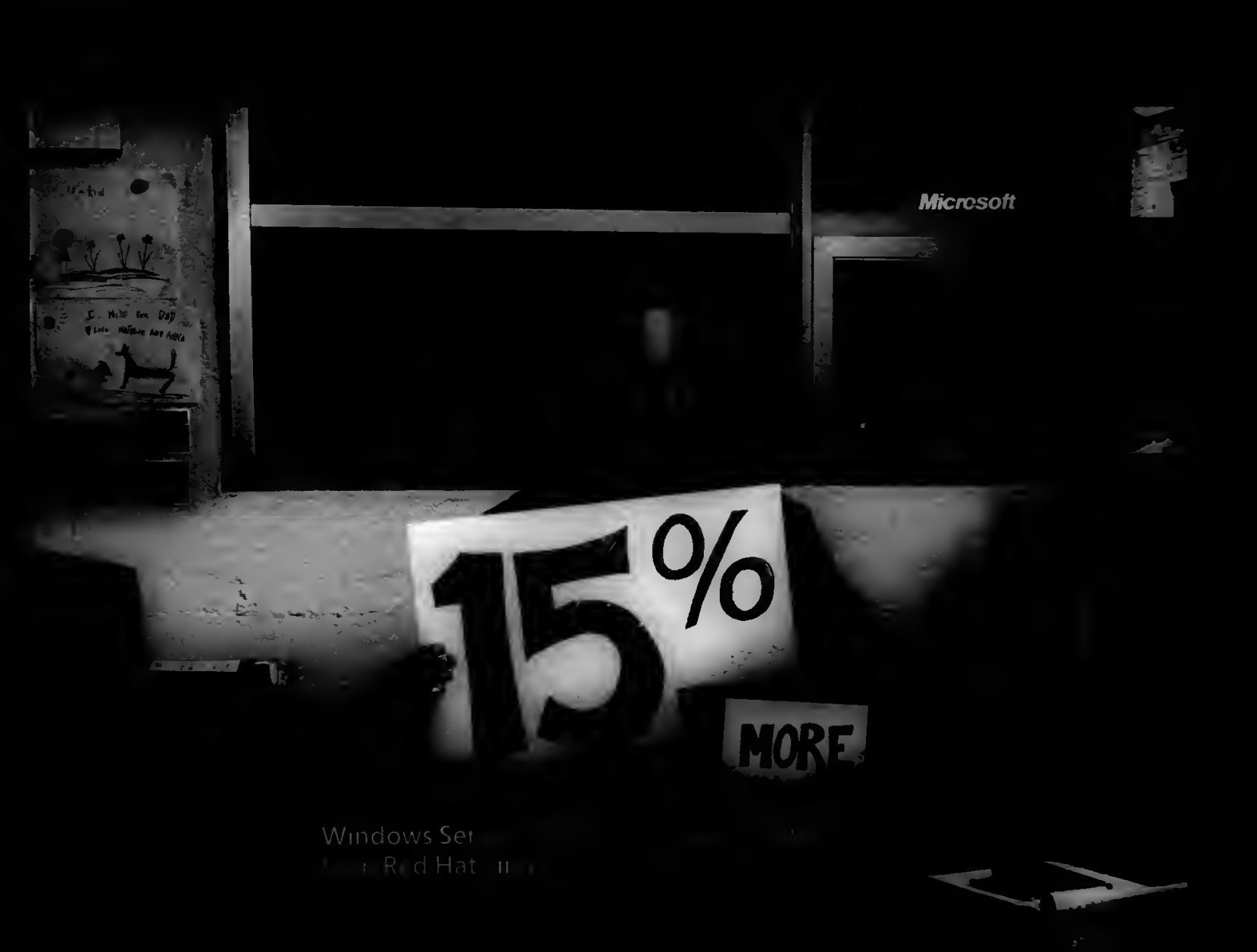
Hochstatter said Ulster Savings last year outsourced its data protection activities to Perimeter Internetworking Corp. in Milford, Conn. The bank uses Perimeter's e-mail protection services and is now considering two-factor authentication for end users.

Speare added, though, that be and many of his industry peers are "cringing" at the thought of using multiple authentication factors. "We're all struggling with that," be said. "We don't want to be in the business of supporting tokens or digital certificates, because we'd have to have a whole support infrastructure around them." **55863**

Recommended Actions

The FDIC said that financial services firms should take the following steps:

- Consider spyware threats as part of their risk-assessment processes.
- Enhance their data security and Internet-use policies to address the risks associated with spyware and specify acceptable end-user behavior.
- Expand employee training to include information about spyware.
- Educate customers about spyware risks and encourage them to take protective measures on their own computers.
- Evaluate multifactor authentication methods, which could limit identity thieves' ability to compromise customer accounts.



Windows Ser
Red Hat

DON TENNANT

Trademark Arrogance

MICROSOFT'S announcement that its next version of Windows (you know, the one code-named Longhorn) will be called "Windows Vista" left a lot of people scratching their heads. Why call it Vista when there are already something on the order of 180 computer-related products with that name? Just because those products aren't operating systems doesn't mean there won't be a lot of confusion and a lot of little guys who will have to suck it up because they don't have the money to even think about standing up to Microsoft in a trademark infringement case.

As Microsoft lumbered unapologetically into that Vista valley last week, I couldn't help but think about the case last year when the software giant decided to squash a 17-year-old Canadian named Mike Rowe. This kid dared to set up a Web site called *miterowesoft.com* (clever, huh?), and Microsoft went ballistic.

First, it demanded that Rowe transfer the domain name to Microsoft, with no compensation other than 10 bucks to cover the domain registration fee. When that didn't work, Microsoft sent Rowe a 25-page nastygram accusing him of copyright infringement and threatening legal action. Eventually Microsoft wrestled the domain name away from Rowe in exchange for an Xbox, the cost of switching to a new site, some certification training and a flight to Redmond so he and his family could attend Tech Fest.

There are any number of other examples of Microsoft's intolerance when it comes to protecting its trademarks. If the Mike Rowe case is the most entertaining, the runner-up is probably the case of Microsoft forcing Linux vendor Lindows Inc. to change its name to Linspire Inc. What's up with that? Since when is a rhyme a trademark infringement?

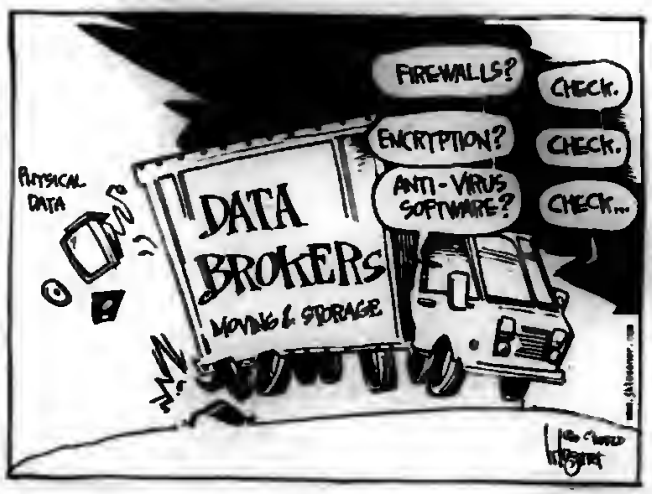
Then there was another case last year in which Microsoft went after a software company called Savvysoft. At issue was a Savvysoft product called TurboExcel, which vastly improves Excel's performance and happens to enable users to run Excel spreadsheets on Linux. That apparently annoyed Microsoft to the point where it finally got around to filing a trademark application for Excel, 19 years after it had introduced the product. With that ammo, it was able to attack Savvysoft.

Beyond this intolerance is a reality-be-damned protectionism that borders on fanatical, if not maniacal. There's actually a page on Microsoft's Web site [QuickLink a6760] that instructs journalists to use those ridiculous ® and ™ symbols on the "first or most prominent mentioo" of every Microsoft name that's trademarked. What that means is Microsoft expects us to do something like this to you: "Developers at Acme Co. use a range of Microsoft® products, including Visual J++®, Visual Studio®, Visual C#®, Visual Web developer™ and Visual FoxPro®." Can you imagine how excruciating it would be to read an article about Microsoft if we actually abided by that absurd "guidance"?

If Microsoft expects the rest of the world to bow in submissioo to its trademarks, it should have the decency to steer clear of the trademarks of companies that lack the resources to put up a legitimate fight. Companies like Epicor Software, Integrated Decision Systems, Gambro, Carter Pertaine and Science Horizons — all of which have trademarked software products called "Vista" — can coexist because none is overwhelmingly dominant across vertical markets. Windows Vista dramatically alters that landscape.

Trampling on those companies this way is inconsistent with the position Microsoft takes with its own trademarks. Worse, it bespeaks arrogance. And nobody can touch Microsoft's trademark on that. **55636**

Don Tennant



BRUCE A. STEWART

It's Up to You to Help Users 'Get' It

"THEY just don't get it." I've heard that phrase over and over throughout my more than 30 years in IT.

The business doesn't get IT. The developers don't get the needs of operations. The users don't get the architecture. The executives don't get how good we are. The list goes on and on.

Take a look at the highly effective achievers in IT. Somehow — is it really just luck or magic? — the people around them seem to get it.

So, what's different? Achievers know that it's their responsibility to help other people "get" whatever they are working toward. They know that they must be leaders, leading those around them toward the future.

Usually when I hit this point in my IT marketing talks or my leadership workshops, someone brings up the example of the executive who's resistant. My favorite example of the past few years is the exec who says, "The answer is outsourcing — what was your question?"

Let's face it: There are a few people whose minds are tightly closed. As with anything else in IT, outsourcing is just a tool, a method of delivery. Tell me what you're trying to achieve, and I'll be able to tell you if it really is the answer. That, by the way, is the way to reply to the outsourcing bigot.

Most people, though, are simply afraid of looking inept or making a bad decision. So they don't try to learn. ("If I don't know about it, maybe it will go away.")

Effective achievers know that rushing out to inundate users with information isn't going to work. (That's why educating business people on IT hasn't helped them "get" it.) Rather, they

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MOBILE & WIRELESS WORLD

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COMPUTERWORLD MOBILE & WIRELESS WORLD

Best Practices IN MOBILE & WIRELESS

AWARDS PROGRAM

August 1, 2005

Intel and Cingular Wireless are proud to co-sponsor this special supplement profiling the winners of Computerworld's 2005 "Best Practices in Mobile & Wireless" Awards Program.

These innovators stand out as business-focused technology leaders who used real-time mobile and wireless technology to create tangible, measurable business value. We hope that these success stories will inspire others to assume leadership in their industries by forging wireless links among their employees, systems, assets and customers.

Congratulations to the winners and those who received honorable mentions in this year's program. Thank you to all the IT professionals, public relations firms/agencies and others who participated in the program by submitting case studies for evaluation. We also acknowledge and extend special thanks to the industry leaders, experts and practitioners who served as judges.

This year's award winners represent a variety of industries. Each offers proof that the use of wireless data has expanded beyond traditional e-mail, messaging, departmental functions and field service applications. These winners have transformed business models and streamlined core business processes while unlocking access to data and enhancing the value of business information within their organizations and enterprises.

To all readers of this special supplement, we encourage you to consider the advantages of wireless mobility today. We believe that, like the attendees of Computerworld's Mobile & Wireless World conference, you will conclude that there is a passion for "best practices" and tremendous pride associated with being recognized for successful IT implementations.

Organizations are deploying these solutions because ROI is achievable, the opportunity for market differentiation is real and the cost of falling behind is prohibitive. Not only are mobile and wireless solutions viable (as seen in the examples to follow), but there is a competitive advantage for those who use them wisely and creatively. The only limit is your imagination and commitment.

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WORLDWIDE MARKETING MANAGER MOBILE SOLUTIONS,

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CATEGORY #1

Business Evolution Through Mobilizing Field Workers

The winners in this category exemplify the adoption of mobile and wireless strategies in the nontraditional mobile workforce. They were able to successfully valuate their field workers' ability to connect with corporate applications and data for business in a remote environment. As a result, they realized increases in efficiency, service enhancement, productivity and bottom line return.

Winner: Maytag Corporation 6
Newton, Iowa

Winner: Sala Motor Freight 7
Duluth, Georgia

Honorable Mention: The ServiceMaster Company
Downers Grove, Illinois

CATEGORY #2

Deploying Wireless Mobility in the Enterprise

These winners are distinguished by the ability of their IT organizations to map and meet line of business challenges through top-down planning for wireless infrastructure. They developed business processes that exploit mobile and wireless technologies while managing and controlling costs. They further demonstrated a unified vision which supports multiple platforms, applications and mobile devices.

Winner: Cox Communications, Inc. 8
Atlanta, Georgia

Winner: pH Europe Ltd. 9
Huddersfield, United Kingdom

Honorable Mention: Staples, Inc.
Framingham, Massachusetts

CATEGORY #3

Transforming the "Brick and Mortar" of the Enterprise

The organizations that excelled in this area opened new realms of profitability and performance by transcending "brick and mortar" limitations. They extended the capabilities and productivity of workers outside the office environment. Moreover, they transformed their business models by driving down costs and streamlining additional processes.

Winner: Landstar System, Inc. 10
Jacksonville, Florida

Winner: Zipcar 11
Cambridge, Massachusetts

Honorable Mention: Blue Cross Blue Shield of Massachusetts
Boston, Massachusetts

CATEGORY #4

Managing Cellular Mobile Data

Winning in this category was dependent upon building and managing PDA-based mobile networks designed to remain compatible with enterprise needs on a long-term basis. This solution includes tapping into widespread deployment of nationwide carrier networks, selecting appropriate technologies, managing and auditing enterprise relationships with SLAs, and enforcing policies for the personal use of business devices.

Winner: PMI Mortgage Insurance Company .. 13
Walnut Creek, California

OPINION

Vertical Horizon

Editorial by Computerworld's Mark Hall 14

Judging criteria and other program information is available online at www.mwwusa.com

Maytag Corporation

FAST FACTS

For more than 98 years, Maytag has been a major player in the manufacturing of home appliances. Over the last three years, the company realized that it needed to change its current service business model of servicing only its own family of products to servicing those of its competitors. Subsequently, in moving to an All-Brand service model, they recognized the need to move from a predominantly cell phone/paper model to a wireless-based system.

Maytag recognized four stakeholders – consumers, technicians, clients and Maytag – using focus groups to identify each of their requirements.

The Challenge

Maytag's requirements included: performance measurements, service call cancellations, and problems related to dispatch, inventory and data integrity. As a result, the project team focused on simplifying current processes. The team used the "process over technology" approach to streamline the business processes before employing the use of technology.

The Solution

Maytag was able to marry the technology with the process. To test the methodology, a proof of concept (POC) project was conducted during a 30-day period in a market of urban, suburban and rural consumers. During the POC, the team validated the use of handheld devices, printers, credit card readers, GPS devices, functional handheld applications, and both terrestrial and satellite communications.

The POC provided immediate feedback, both good and bad. Maytag dealt with various issues with wireless remote printing, a credit card application challenge, a satellite provider that didn't provide the necessary realtime updates, and GPS mapping that was mediocre at best. After successfully addressing these issues, Maytag expanded into an Operational Pilot program for three markets across the United States. In the wake of these enhancements, Maytag observed improvements in technician productivity, operating costs and the overall consumer experience.

Maytag realized the following key benefits from this project:

- 4.5% on-time service delivery increase
- 33% service arrival time improvement
- 17% in-home repair cycle time improvement
- 200% technician productivity improvement over project goal
- 50% in-home accessory sales increase
- A company service quality assessment score of 98% approval.

Maytag Services Director of IT and Business Information Officer Craig Hansen noted, "By extending our enterprise into the wireless world, we improved our productivity, profitability and most importantly, provided a better service experience for our consumers." ■

JEFF MORGAN (LEFT), DIRECTOR OF FACTORY SERVICE AND CRAIG HANSEN, DIRECTOR OF IT AND BUSINESS INFORMATION OFFICER

MAYTAG CORPORATION

Saia Motor Freight

FAST FACTS

"Having access to realtime data for customer needs and improving internal processes is huge for our company."

Saia Motor Freight, a $600 million revenue LTL carrier with a 30-state coverage area and 127-terminal network, recently implemented a wireless solution for its P&D (Pickup and Delivery) Drivers. The wireless solution was implemented to improve communications and P&D times.

The Challenge

The challenge was to provide a cost-effective solution for realtime dispatch and customer service.

Saia has been under market pressure to provide more timely POD (Proof of Delivery) information to customers who utilize the information to improve their accounts receivable function. This information includes the time of delivery and the person who signed the receipt of the freight delivery. In the past, this could take several hours or days to provide.

FROM LEFT TO RIGHT: ROHN FLANDERS, DIRECTOR OF IT, DAN GIESEN, DIRECTOR OF OPERATIONS, LOU STOVER, ATLANTA DISPATCHER

Saia was also looking for technological developments that would improve communications between drivers and terminals, and would lead to enhanced coordination of freight pickup and delivery. Prior to the wireless solution, coordinating driver pickups and gathering tonnage information was a manual and time-consuming process.

The Solution

The solution called for cellular phones and a telecommunications carrier.

Since regular and timely voice communications with drivers is an integral part of the company business structure, and because drivers already have cell phones, the plan was to build upon the existing communications infrastructure. A GUI front-end was developed internally for use by the dispatchers with a WAP solution via a web server for drivers. All components connect directly to the Saia host AS/400 system.

Pickups are entered via the terminal, centralized customer service, EDI or the Saia website, and appear in real time on the dispatcher's screen. Dispatchers can then point and click to assign a specific driver to the pickup. The driver is notified on his cellular phone that he has a new pickup and receives all the pertinent information to review.

When the driver makes the pickup and delivery at the customer location, the information is entered into the phone via a user-friendly "Pick and Choose" option. The customer information is immediately updated in the AS/400 system.

Saia saw immediate benefits from providing delivery information to customers within minutes of delivery. This information is available to Saia customers in real time via the Saia website or through a call to a customer service representative. A reduction in clerical costs was immediately seen due to the driver entering sufficient shipping information to create a "skeleton" bill. A night biller who compares the bills of lading to the driver-entered bill then enters complete billing information and completes the billing process.

Previously, night terminal or central office employees billed these shipments manually at a premium of time and expense.

Saia saw additional benefits for its linehaul group by having faster and more accurate tonnage pickup and destination data. This ensures better planning and a potential reduction of night shipping schedules to move the freight to its destination. ■

SAIA® MOTOR FREIGHT INC.

Cox Communications, Inc.

FAST FACTS

COX COMMUNICATIONS

Your Friend in the Digital Age.

Cox Communications is devoted to creating the best customer experience possible. They found that customer satisfaction largely depends on Cox Field Operations' ability to quickly respond to customer needs through effective "truck rolls" – delivering the right service to a customer by the right technician at the right time. To help drive field service efficiency, Cox uses a workforce administration (WFA) system that assigns work orders to field service representatives based on a number of attributes including skills, availability and proximity. Approximately 90% of the work orders are routed through the system, with only 10% of orders requiring manual processing.

Cox Field Operations' WFA system capabilities include work order updating/closing, customer equipment activation, service modification, database reporting, GPS tracking, and wireless communications. By providing these tools for their mobile workforce, Cox reacts more quickly to customer needs, driving up customer satisfaction.

The Challenge

Cox needed to provide seamless and secure field connectivity so mobile service representatives could receive dispatch information, regardless of their location. Cox also wanted to provide pervasive access to a variety of back-office administrative tools and the ability to remotely manage mobile worker devices and applications.

To achieve the needed coverage, Cox had migrated the majority of communications channels from a private radio network to various public carrier networks for wide area coverage, supplemented by private 802.11 networks to provide local access to bandwidth-intensive applications and to support device and application management. In order to enhance solution efficiency, Cox wanted all security and network connectivity to be managed without user intervention. Additionally, Cox wanted to extend the communication capability to contractors and workers in both wireline and wireless environments.

The Solution

Cox chose a system that creates seamless, secure VPN access to network resources and provides an always-on connection as users roam between wired, wireless LAN and wireless wide area networks. It also operates on the variety of different mobile computing devices used by Cox, including notebooks, tablets and handheld computers. This solution successfully enabled increased productivity for field service workers, and its innate flexibility and scalability will allow Cox to extend its functionality to additional business groups.

By deploying their new solution, Cox has been able to create a more productive un-tethered communication experience for its mobile workforce. ■

FROM LEFT TO RIGHT: AL BRIGGS, DIRECTOR, MARK MANGLICMOT, APPLICATION ENGINEER, JIM JONES, SENIOR PROJECT MANAGER, SUNDEEP SUNNY, PROJECT MANAGER, MICHAEL KOVASH, SENIOR PROJECT MANAGER, JOHN SMILEY, EXECUTIVE DIRECTOR, JASON DZICZKOWSKI, PROJECT MANAGER

pH Europe Ltd.

FAST FACTS

"Knowing the whereabouts of every container at any time allows us to respond to customer demands with unprecedented accuracy and efficiency."

pH Europe Ltd. is well known for a portfolio of transport container services that a growing roster of customers employ to deliver products ranging from chemicals and pharmaceuticals to foodstuffs and industrial parts. Customers including GSK, Sun Chemical, Avecia, Johnson Matthey, AllessaChemie, Methode and AH Marks rely on pH Europe's mission-critical transportation, storage and tracking services.

The Challenge

Two years ago, the company began researching RFID and GPS tracking as a way to optimize their supply chain processes and ensure that rental assets were prepared for service and quickly deployed. During the preliminary planning phase, it was thought that a GPS solution might provide the necessary location functionality for the project, but it was quickly determined that GPS alone would prove far too expensive in the long run.

The fact that GPS asset tags would also need their batteries recharged on a frequent basis would not allow a reasonable TCO. The evolving realization was that a hybrid RFID/cellular/GPS solution featuring long-range active RFID technology at the container level, and GPS/cellular at the truck level, would need to be defined. In addition, the system would need to be flexible enough to incorporate tomorrow's RFID, cellular, remote sensor and mesh network data. It would also need to be secure.

The Solution

By utilizing a data management platform, a systems integrator was able to configure a leading-edge solution that increases visibility into the company's container fleet. The solution features active RFID asset tags and readers operating at 433 MHz, an on-site 802.11 network, and integration with truck-based GPS and cellular data platforms. Today, pH Europe puts industrial containers into service at lightning speed, and can follow them as they interface with the supply chains of their customers.

The benefits realized over the last eight months by integrating RFID location and tracking to enhance supply chain visibility are many. Through real-time visibility of what is currently available in the warehouse and easy access to customer demand and trending data enabled by RFID, pH Europe is now able to plan ahead for the utilization of a particular asset and build schedules for its use.

Beyond the optimization of their internal wireless asset tracking system, pH Europe now can offer their own customers an "asset tracking service" whereby they track and monitor mission-critical assets as an additional revenue stream. Other internal benefits include: improved asset utilization, pricing flexibility and activity-based billing, reduced labor expenditures, reduced breakage and loss, improved service quality, reduced transportation costs, and better understanding of the customer and their operations. ■

FROM LEFT TO RIGHT: JACK CLEMMONS, SALES AND MARKETING DIRECTOR, IVELINA NIKOVA, PROJECTS MANAGER, AWARD PRESENTER, PAT HINDLEY, DIRECTOR, ANDREW BLACKWELL, DIRECTOR

Landstar System, Inc.

FAST FACTS

[illegible] these enable Landstar to attract and retain small business owners and increase financial growth without adding employees."

Since 1999, Landstar System, Inc. has delivered an average 27 percent return on capital. A major part of that achievement is the non-asset-based transportation provider's success in leveraging wireless technology.

The Challenge

Landstar's business model combines wireless Internet and other technologies to support approximately 10,000 small business owners who provide safe, reliable truckload transportation services to various shippers throughout the world. Independent truck owner-operators and sales agents earn a percentage of the revenue generated from each load they haul. Landstar's success is contingent upon the success of these small business owners, and the company works diligently to provide them with the tools to compete in today's tough transportation industry.

The Solution

In September 2000, Landstar launched a first-of-its-kind business-to-business cellular wireless data service in the North American transportation industry. Through cell phones and other web-enabled wireless devices, truck operators were able to access the company's freight board from the cabs of their trucks.

Truckers can update their load status using Landstar's natural language speech-enabled interactive voice response (IVR) system. The text-to-speech application communicates user-specific information via cell phone, including reminders regarding equipment inspections, license plate renewals and other critical deadlines. More than 1,000 sales agents send freight data to truck operators with a single click. Through text-to-speech capabilities truckers receive automated detailed voice messages regarding money-making freight opportunities on their cell phones.

Landstar monitors emerging technologies and appreciates WI-FI's potential as a significant player in the wireless arena. Last year, the company began installing free WI-FI cards in truckers' laptops and made the commitment to light up WI-FI hot spots at its remote orientation centers throughout the country. Those centers serve as safe havens for Landstar contractors, where in addition to using free laundry facilities and showers, truckers can now e-mail their families and friends, search for loads and research fuel discounts from their cab bunks at no charge.

The company also launched a mobile wireless document scanning program that enables laptop or home PC users to inexpensively scan in their paperwork. Landstar benefits from the reduction in personnel required to scan and process these images.

Landstar's mobile field staff uses handheld devices to access e-mail, resulting in improved productivity and communication with agents and customers. Landstar converted its traditional PBX phone systems at orientation centers and regional offices to VOIP, leveraging its investment in VOIP systems.

Landstar's pioneering approach to information dissemination has turbocharged its business model, making the firm a leader in the transportation industry. ■

A LANDSTAR SERVICE REPRESENTATIVE USING A WIRELESS DEVICE

Zipcar

FAST FACTS

"[illegible] backoffice maintenance to the superior member experience at each Zipcar, we have created a technology solution that is easier to use than an ATM, enabling us to bring car sharing to the masses."

zipcar.

Zipcar is a car-sharing service based in Cambridge, Massachusetts. This innovative, membership-based service uses wireless technology to remotely monitor its assets and serve its customers. Hourly fees are as little as $8.50 per hour, and include gasoline, parking, XM Satellite Radio and even insurance. Zipcar technology is now being used in eight states and 21 North American cities. Its unique approach to an underserved consumer need has become a marketing success story. The company is also serving an increasing number of businesses who find the service an economical alternative to their own fleet or to using traditional car rentals.

The Challenge

In order to meet its goals, Zipcar wanted to be able to remotely monitor vehicle use and status in an effort to protect its investment in vehicles. That meant building a reliable and secure system to control and monitor member access to Zipcar vehicles at the point of need. It also meant delivering on the promise that Zipcars are self-service, fully automated and very convenient to use.

It was critical that the company be able to accept member reservations and transmit data in real time to maximize the service's unique value, revenue and customer loyalty. Toward that end, Zipcar built a flexible system that would easily scale to new markets with increased demand and locations.

The Solution

Zipcar administers everything from its Cambridge headquarters. Members can reserve a vehicle either online or by telephone. A proprietary embedded system installed in all Zipcar vehicles combines a proximity card reader and modem to receive reservations information.

The Zipcar reservation process is very secure and reliable because every member is issued a unique "Zipcard" upon joining. This Zipcard is authorized for use via a data network when a reservation is made. Zipcar members can reserve an available car near them, choosing from cars and locations within walking distance from their location. The Zipcard authorization process can occur within seconds of making a reservation. Members go to the location of the car they've reserved and hold their Zipcard in front of a proximity card reader in the car. Their membership and reservation is validated, and only then does the system unlock the car door and enable the ignition.

CARL TASHIAN AND JONATHAN WOLFE, SENIOR ENGINEERS

Members use the car, returning it to the same location, ready for the next reservation. Usage information is sent to Zipcar's servers and the member's account is automatically charged.

Zipcar's unique business model has been successfully launched and has garnered national media attention, which has lead to membership and revenues doubling in 2004. The company is pleased to report that Zipcar's reliable and secure vehicle access and monitoring systems have handled hundreds of thousands of self-service reservations.

In addition, accurate, timely vehicle use information has resulted in efficient revenue forecasting and payment collections. This good news on the financial front looks even better in light of the fact that Zipcar has reported that 39%-plus of members are so pleased with their service that they have either sold their cars or decided not to buy one. ■

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PMI Mortgage Insurance Co.

FAST FACTS

"Working together, our sales and IT teams created a wireless environment that allows our sales force to respond instantly, wherever they are. Customer support and feedback are at record levels of satisfaction as a result."

The Challenge

PMI Mortgage Insurance Co. wanted to provide better customer service internally (better tools and support to the sales force) and externally (to increase business and, ultimately, revenue), while maintaining costs and controlling security.

Their vision was to standardize technology while providing security to the organization and building a platform that could be expanded as business needs changed and sophistication of the workforce increased. The ultimate goal was providing a wireless environment where the company could communicate with their customers and report on them, wherever they are.

However, their ability to operate technology varied greatly within their group.

The Solution

PMI introduced and integrated a CRM solution and wireless communications system. The project could only be successful with IT and sales working together with the support of senior management.

They began a combined IT and Sales strategy to introduce laptops and a CRM solution. Over the course of eight weeks they brought every sales representative into headquarters and provided computer training and CRM orientation. They standardized the equipment and provided a secure network for the sales team to access company data.

The next step was wireless communication and cost controls. The handheld devices provided the means to get there. They negotiated a company rate for data and voice plans. They also could control access and devised a way to "zap" a device if lost or stolen. Further, with the software they employed, they could allow mobile, wireless access to their CRM solution.

The result was a completely wireless platform that allowed PMI to better communicate internally and externally while reducing costs. As for the proof, with one bill, they can manage the costs of telecommunications and monitor usage of company property. The cost of deploying the handheld devices was cheaper than deploying a cell phone and separate PDA to all their sales representatives. The savings was several tens of thousands of dollars.

PMI can now better communicate with its customers. In the past, sales reps could only respond to e-mail at night, on their own computers. Often, the delay could cost the company business, as a customer would call someone else if they did not get a response. Sales can now respond instantly. Customer support and feedback are at record levels of satisfaction. Increased production with some of their biggest lenders is attributable to better service levels. This has increased premiums and had a direct impact on top line growth.

STANDING FROM LEFT TO RIGHT: LAURA AMATO, DELAND MAYNARD, ERIK VESNESKI, STEPHANIE CORNS
BOTTOM FROM LEFT TO RIGHT: CARL TAM, DAVID LIM

In summary, PMI customer management and information has increased—they know more about their customers. Working together, sales and IT have affected the top line and expense line, ultimately improving their bottom line. ■

PMI.

Vertical Horizon

MARK HALL IS A COMPUTERWORLD EDITOR AT LARGE. CONTACT HIM AT MARK_HALL@COMPUTERWORLD.COM

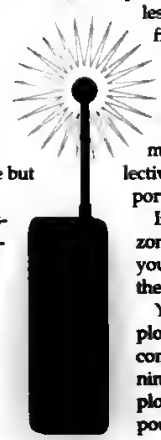
Overworked CIOs should refuse to support end users' wireless devices unless the handhelds are for a specific business requirement. And saving hotshot executives a few minutes of their precious time so they can thumb their way through e-mail while waiting in airport security lines isn't a business requirement.

But don't start practicing polite but firm ways to say no just yet. That's because the wireless industry will be unleashing in the coming months and years a slew of vertically focused products designed to deliver true business value and not just gee-whiz convenience.

As a result, handheld wireless devices have the potential to shake the foundation of IT much like PCs did so long ago. Just as the PC disrupted corporate IT by appealing to broad numbers of workers with horizontal software like Excel and Word, wireless systems will similarly discombobulate your department by luring end users with claims that they can solve business-specific application needs.

This means you overworked CIOs are doomed to deal with wireless device proliferation. "No" won't be in your vocabulary. And you'll be hearing from your line-of-business peers about the ROI of the wireless applications they want. Real soon, I suspect, if you haven't already.

According to The Insight Research Corp. in Boonton, N.J., eight vertical markets — utilities, health care, transportation, communications, wholesale trade, retail trade, durable manufacturing and financial services — are poised to spend $7.6 billion in 2006 on wireless data services alone. That figure doesn't include the billions of dollars spent on the hardware and software designed for those markets. Nor does it include the billions more you'll spend in your collective budgets to secure and support these myriad devices.

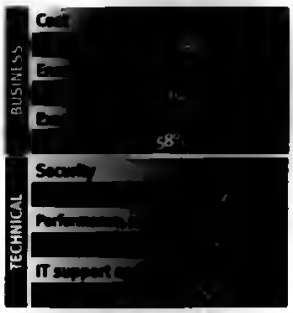


If the handhelds on your horizon merely meant more expense, you wouldn't have to worry. But they're much worse.

You'll be confronting the deployment and management of complex, n-tier applications running on a mix of largely unexplored operating systems. Compounding the problem is the end-

Top Challenges

The biggest management and technical challenges in mobile/wireless projects:



Base: 522 IT decision-makers at North American companies; multiple responses allowed

SOURCE IDC, FRAMINGHAM, MASS., OCTOBER 2004

less array of hardware configurations and suppliers that you'll get to choose from. Plus, you'll have to think very carefully about the added information-security burdens. You'll need to attract new people with wireless skills or train existing staff on new stuff. And you'll have to cull through an untested crop of consultants to find the gems who know your business and wireless technology.

This will be much, much more than just ordering instant messaging for your sales force from your cell phone service provider. It's a daunting process, one that might send many a current CIO into early retirement. But hold on.

"Don't panic," soothes Michael Mace, chief competitive officer at PalmSource in Sunnyvale, Calif. "You don't need a big wireless strategy now."

He says wireless technology is moving at such a fast pace that it would be unwise to cast your wireless policy in stone today. "Let it evolve," he says.

Mace, whose company develops the Palm operating system for many different wireless handheld makers, thinks you should "pick the low-hanging fruit" inside your company. That means driving wireless deployment programs that do what everybody knows IT does best: automate processes and eliminate paper. Field service staffers, claims Mace, are among your best candidates for wireless tools. Look to buy or develop wireless applications that improve the productivity of expensive workers in the field, reduce their data-entry errors and cut process costs, Mace says. It's an easy way to become a hero inside the company.

Brian DeMuy agrees. Field services is an ideal place for wireless applications. But "winning user adoption is huge," adds the manager of business development for new markets at Mobile Data Solutions in Richmond, British Columbia. Think through how those end users work. Will they be using devices inside their vehicles or in all kinds of weather? Do they need a ruggedized unit? The hardware's form factor may be just as important as the software it runs, DeMuy warns. In most cases, the field service staff won't be nimble-thumbed teenagers. Make sure the data-entry process is dead simple.

One more bit of advice from DeMuy: If you support union workers in the field, don't try to bypass them. Get the union on board and involved in the device-selection process.

Training will be key, too, agree DeMuy and Mace. Whether you support callous-handed journeymen working atop telephone poles in ice storms or soft-handed heart surgeons, it's likely that whatever wireless handheld device and application you give them will be a brand-new experience.

You won't be the only person suffering through the upheaval wireless technology brings. End users will need a lot of hand-holding for their handhelds. Be kind. ■

Customer Satisfaction

Users rated their satisfaction with the following mobile/wireless technology and vendor characteristics:

Base: 464 IT decision-makers at North American companies; multiple responses allowed

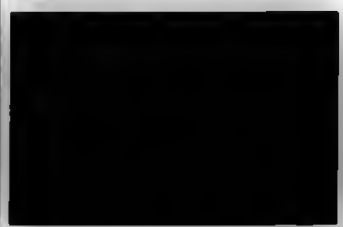
SOURCE: IDC, FRAMINGHAM, MASS., OCTOBER 2004

Selection Criteria

Enterprise users say these are the most important selection criteria for mobile/wireless technology vendors:

Base: 519 IT decision-makers at North American companies; multiple responses allowed

SOURCE IDC FRAMINGHAM, MASS OCTOBER 2004



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have to draw them in. So their vision is constant, but the message keeps changing.

Let's think about an architect who is trying to break down the old "I have a project, let's just get oo with it" thinking in his company:

- To the executive who controls the money, he talks about how to get that project done in a way that delivers more of a return over time.
- To the leaders of the work area, he talks about making things easier so that they can do their work. (Depending oo the type of work, *creativity* or *analysis* may be key words.)
- To the development team, be talks about how what he is doing will open doors for them.
- To the other architects, be talks about things such as "taking your wins when you can get them" and "let's get some of it today; we'll get the rest of it later." (Remember, the perfect solution is the enemy of the good solution — the one you can actually get accomplished now.)

One visioo — that of a proper, orderly, structured enterprise business architecture with organized information and well-designed solutions — is communicated and "sold" in many ways. Oddly enough, none of the achievers I've talked to mentioned "architecture" directly (at least in the early days). Each delivered messages tailored to give recipients something to grab on to that they were comfortable with — money, work, process, technical competence — and something they could sign up for — results.

If "they" don't get it, what are you doing to lead them? **55779**

THORNTON A. MAY

IT Workers Confront 'Job Shock'

THIRTY-FIVE years ago, my former boss Alvin Toffler coined the term *future shock* to describe the shattering stress and disorientation experienced by individuals when they are subjected to too much change in too short a time. While working on a multiyear project examining the future of IT work, researchers at the IT Leadership Academy discovered a related concept — "job shock," the vocational vertigo IT professionals are just now beginning to experience as their careers and developmental aspirations slam full throttle into a radically changed and rapidly transforming world of IT work.

The first thing the research revealed is that *IT work* and *IT jobs* aren't synonyms. The work of IT is increasing — more bits are being moved, manipulated, transformed, stored, personalized and protected. They are sent to more places, to more people and for more purposes than ever before. This fact hasn't made it into public consciousness. There is more work to do. But there may not be more jobs to handle that work.

Any B-school professor can recount hundreds of stories about why students are in class and not in the workforce. It's not unusual to hear things like, "Four years ago, I was making $180,000 designing Web sites. That work is now being done in India." Truth be told, that work is probably being done by users themselves with the aid of smart machines. One of the major transformations taking place in the IT industry is automation. IT work that used to have IT jobs attached to it is now being automated and done by the end user.

Laura Tyson, former dean of the Haas School of Business at the University of California, Berkeley, and former chairman of the Council of Economic Advisers during the Clinton administration, is always quick to remind the "antimachine" people among us that the invention of the automobile eliminated thousands of jobs in the buggy industry but created even more jobs in the fledgling auto industry.

That's historically true, and Jeremy Rifkin, author of *The End of Work*, agrees that "the Information Age will create many new products and services." But, he adds, "unlike the past, however, when mass labor was required to produce these goods, in the future, they will be churned out in nearly workerless factories and be marketed by nearly virtual companies." This is a very real worry.

Serious-minded and very smart future-thinkers are pondering the questions: What if paid IT employment was to steadily disappear? What would become of the men and women for whom such employment, especially good jobs, was a central organizing element in their lives?

If you wanted to cootinue to feed yourself, you'd need to do three things:

1. Network with the people in your local economy who best understand the trends and current economic "rents" associated with a given set of skills — the IT staffing firms. They have great data and would love to talk to you.

2. Understand the next three strategic steps your organization is going to make, and build deep personal relationships with the executive platoons that are going to drive those initiatives.

3. Get yourself trained and educated.

You will face pressure from machines getting smarter, similar-skilled global labor alternatives getting cheaper and executives paying less attention (if that is possible). Knowledge and networking will help you through the trauma of job shock. **55756**

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READERS' LETTERS

AMD Users Rush to Vendor's Defense

I'VE BEEN on AMD for four years now. My Athlon 1400 still outperforms the lower-end Pentium 4s. Don Tennant's article "AMD: All My Disgust" [QuickLink 55310] mirrors suspicions that I've had for the past two years.

Intel has never played by the rules. It is desperately pushing its ill-fated Pentium 4, yet in benchmarking tests, the Xeon is better for almost everything users want to do. Intel was the first to have dual dies on the processor.

AMD was the first to have dual-core. Furthermore, AMD learned from Apple's long and distinguished history of multiprocessor computing. In the Power Mac G5, the two processors, though they were separate, were very closely tied. Each could access the other chip's cache. AMD took this notion a step further. The two cores in an AMD chip are actually capable of communicating with each other. Each core has its own separate cache and memory. Intel cut corners while AMD took an extra month and delivered a product that was what it said it was: dual-core nirvana.

Chris Miller
Lead programmer, Firestorm Development Group International, Pleasanton, Calif., lordsauronthegreat@gmail.com

I CAN readily agree with the first two things that anger Tennant, but to say that it is the victim's fault for being beat up by the bully is ridiculous. AMD never had the resources to outmarket Intel, and no degree of marketing within AMD's scope would have changed Intel's direct assault on its customers' bottom lines. Do you really believe that Gateway CEO Ted Waitt would have said, "Hell no, damn the bottom line, I want AMD!" Not likely.

Tom Cook
Analyst, Thomasville, N.C.

Encouraged by Open-Source Effort

IT WAS really encouraging to read the Security Manager's Journal "Eyeing an Opening for Open-Source" [QuickLink 55015]. I have often fought for embracing open-source where integration is not as important as conformity to standards. Good luck to C.J. Kelly in her projects, and this will definitely motivate me to keep up the fight.

Femi Ogundimu
Atlanta, femialpha@gmail.com

Hard Drives Are The Weakest Link

AS AN AVID laptop user, I have seen that what really fails on laptops is the hard drive. Has Seagate managed to make its hard drives unkillable ["Seagate Preps Hard-Disk Encryption Technology," QuickLink 56560]? If not, then what do we do when the hard drive goes bad? I change laptops only because of hard drive failure, usually a year to a year and a half after purchase. At that point, I get a brand-new computer and send the hard drive out to be recovered. This new security technology is no good if it is self-contained and unrecoverable. It would have been better to have a software portion of the technology that is hardware-independent.

David Sonner
Hollywood, Fla.

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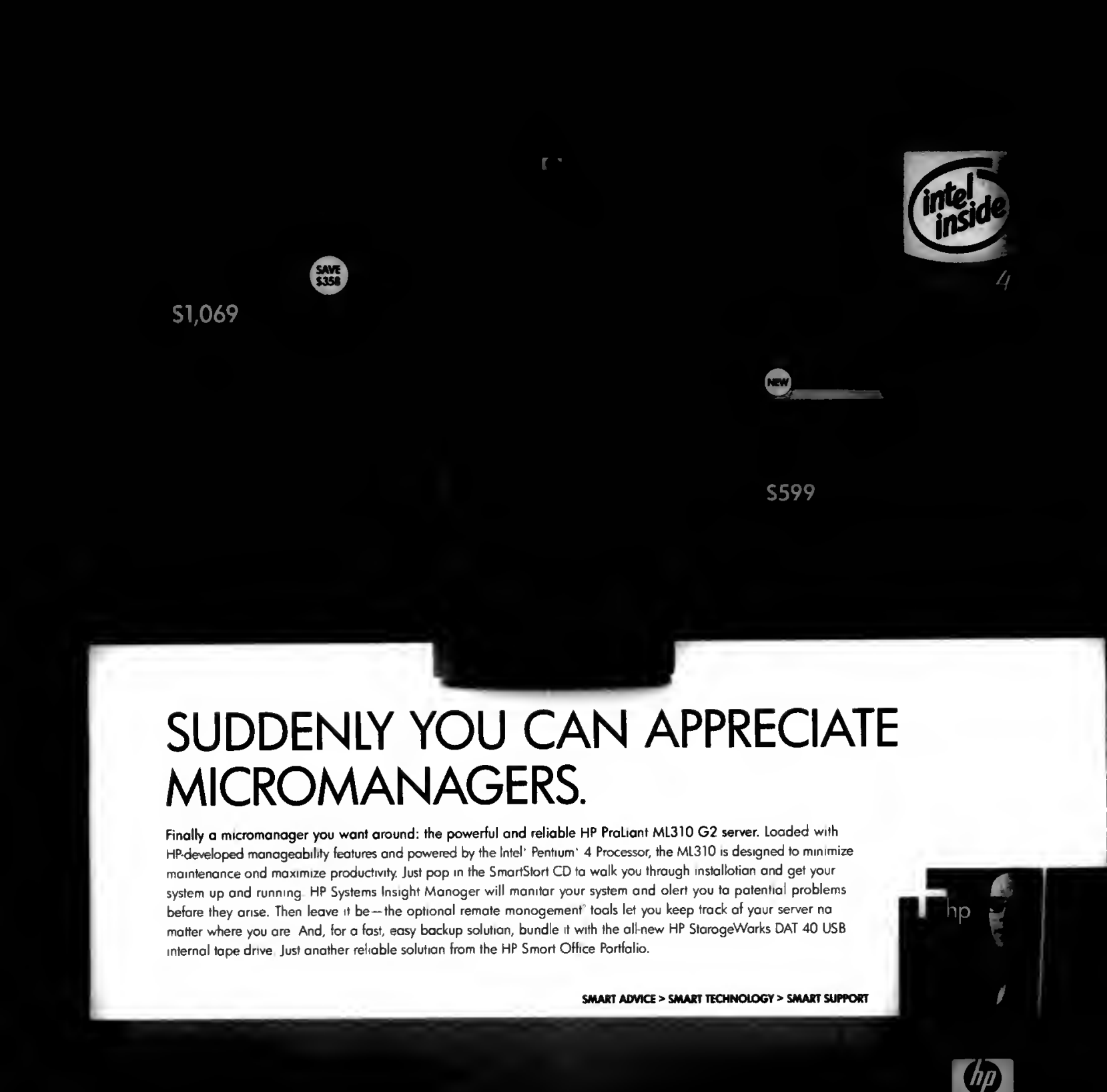

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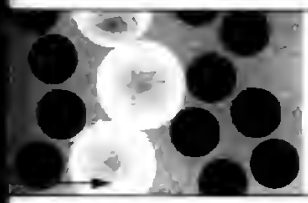

FUTURE WATCH
Thanks for the (Future) Memories
Technologies now in research labs could eventually replace conventional computer memory architectures. One possibility: do-everything memories. **Page 25**

SECURITY MANAGER'S JOURNAL
User's End Run Around VPN Leads to New Push
A worm crawls into the network when an employee accesses the VPN improperly. Now Mathias Thurman has to figure out how to avoid a repeat. **Page 29**

OPINION
A Convert With a Crush on His Mac
Douglas Schweitzer celebrates bis second (very happy) anniversary as a Macintosh user. **Page 30**

Healing Power

The U.S. electric grid is still years away from being intelligent enough to prevent blackouts and other disruptions. But there are existing and emerging technologies that can help it to repair itself.

BY THOMAS HOFFMAN

THE AUGUST 2003 blackout that left nearly 50 millioo people without electricity in mucb of the Northeastern U.S. and the Canadian province of Ontario did have at least one positive effect: It pushed the North American power industry to work harder to create a self-healing electric grid.

Problem is, the distribution grid that connects dozens of utilities and regional transmission organizations (RTO) with residential and commercial customers "is almost nowhere near" self-healing status, says Doug Fitchett, distribution research and development program manager at American Electric Power Co. in Columbus, Ohio.

"Think about your personal computer and the Internet. If your computer malfunctions while surfing the Net, you don't bring the World Wide Web to its knees," says Tim Healy, chairman and CEO of EnerNOC Inc., a Boston-based provider of demand response technologies used by the power industry (see box, bottom of page 24). "Similarly, if you hit the wrong key at your office and your screen turns blue and freezes your system, you don't usually cause the rest of the office or your local-area network to grind to a halt."

But it's a different scenario with the nation's nonadaptive electric network, which is prone to a cascade of problems when one critical component, such as a transformer, fails, says Healy.

"I'd venture to say that we're 5% to 10% of the way there, but not as the result of one centralized orchestrated effort," says Zarko Sumic, an analyst at Gartner Inc. Current technologies, such as software algorithms used to identify equipment failures and then react to them, could belp the electric industry get about halfway toward achieving a self-healing grid, Sumic adds.

The management of the nation's electric grid "is largely still done at the human level," says Ron Ambrosio, research manager for the energy and utility industry at IBM.

Ambrosio and other industry experts say a variety of existing and emerging technologies could go a long way toward helping the U.S. develop a self-healing electric grid. They include software that could be used to examine patterns of electrical use to help predict demand; intelligent sensors that could be installed on transformers and other components to detect and report oo equipment problems; and systems that could be used during peak demand periods to notify industrial customers that they should curtail their use of electricity.

But there are several technical and business factors that are impeding

Continued on page 24

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Continued from page 21

progress toward a more reliable grid, say Fitchett and other industry executives. For starters, the electric industry needs a stable communications backbone so that relays and other devices on the grid that sense problems like generation overloads can communicate more effectively and reliably with one another.

The current communications infrastructure used by the U.S. electric industry is multilayered. RTOs that operate regional grids each run primary and backup voice and data networks both within their regions and between other RTOs and themselves, says Michael Bryson, manager of transmission at Valley Forge, Pa.-based PJM Interconnection LLC. PJM is an RTO that supports 51 million people in 13 Eastern states and the District of Columbia.

In addition, many utilities have implemented their own private data networks so that in the event of any disruptions to public networks, "there's still communications within the electric industry," says Bryson. In 2000, for example, PJM implemented PJMnet, a private frame-relay network that carries the bulk of its computer data and some of its voice support. PJM uses public data networks as a backup to PJMnet, he says.

Besides concerns about the reliability of public data networks, utilities also have security issues to contend with. As power companies begin to install intelligent sensors on transformers and other pieces of equipment to communicate information about outages and other problems using public networks, systems become more vulnerable to cyberterrorists, notes Bryson.

The most secure form of communications involves fiber-optic technology. But it's expensive — it can cost a $20,000 to $30,000 per mile to connect electric substations with a control center, "and some of our stations are 40, 50 miles apart," says Fitchett. Besides, there's a reluctance among utilities to invest in fiber optics, since there isn't a clear return on investment, he adds.

Relay Rewind

When [illegible] there was a cascading effect [illegible] and RTOs. But one RTO that was able to isolate most of its 51 million customers was **PJM Interconnection**, thanks in large part to 20- to 30-year-old relays [illegible] played in its regional grid.

PJM serves customers from North Carolina to New Jersey and as far west as Illinois. System relays in them New Jersey and southern New York went [illegible] power overloads and automatically protect the PJM system from the [illegible] system, says Michael Bryson, PJM [illegible] of transmission.

Although some customers in the New Jersey dirt-end up losing power because of the disconnects, the older relay technologies "did exactly what they were supposed to do," says Bryson.

Thomas Hoffman

Meanwhile, wireless communications networks could be cheaper to use than fiber-optic networks, but they have reliability and security shortcomings, says Fitchett.

"What a lot of utilities are beginning to realize is that we're going to need a hybrid system, like a Wi-Max to a mesh network of 800 MHz — maybe even some power line technologies," such as broadband-over-power-line communications systems, says Fitchett.

Bryson says he believes the power industry will move toward a publish-and-subscribe communications system over the next five to 10 years. Such systems are more efficient than IP-based networks, since utilities that subscribe to them access only the information they need, he says.

Smart Sensors

At present, most utilities discover power outages only after customers call to report them. Power companies "don't have sensors to know if electricity is flowing to everyone's homes," says Don Von Dollen, technical integration manager at the Electric Power Research Institute in Palo Alto, Calif.

In 2003, EPRI launched the IntelliGrid Consortium, a group made up of vendors and utilities, including Consolidated Edison Inc. and the Bonneville Power Administration, that's working to develop an intelligent power grid.

The idea would be for the electric industry to install sensors on switches and other equipment and connect them to public and private communications networks. The sensors could then quickly alert utilities and RTOs about equipment malfunctions or anomalies that might lead to a power disruption.

But while intelligent sensors are now available to monitor and report on the status of transformers and other electric equipment, they're expensive, making it prohibitive for utilities to deploy them on thousands of switches and pieces of equipment tethered by thousands of miles of power lines.

"We need a $10 device, and they're in the hundreds and even thousands [of dollars] range," says Fitchett.

Meanwhile, the uncertain regulatory environment has led utilities executives to question whether steep investments in sensors will be justified by their returns, says Rick Nicholson, an analyst at market research firm Energy Insights, a division of IDC. Plus, there's no regulatory authority that requires utilities to invest in these kinds of technologies, he adds.

From 2000 to 2002, U.S. utilities invested a paltry 0.12% to 0.18% of their revenue in research and development, according to EPRI. In comparison, Fortune 500 drug companies spent an average of 12.5% of their annual revenue on R&D during that time.

Widespread deployment of equipment sensors would raise other technical challenges. For instance, the more sensors that are deployed, the more data there is to extricate and manage, notes Von Dollen. Moreover, there's no central regulatory authority, such as the Federal Energy Regulatory Commission, that's required to gather and monitor that kind of data.

Members of the IntelliGrid Consortium are looking at establishing "decentralized substations" for collecting and processing sensory data from more than 150,000 miles of transmission lines across the U.S. and then funneling that information to a central location for data analysis, says Von Dollen.

"You need a rugged sensor that can be exposed to the elements that doesn't cost a lot of money," says Von Dollen. "That's a tough challenge."

For its part, PJM "has a pretty sophisticated" energy management system that's capable of examining thousands of data points at a time across its 13-state grid, says Bryson. "But we're reaching the limits on computing power to be able to crunch this data," he adds.

In the end, the future of a self-healing grid is largely dependent on the amount of money utilities are willing to invest in new technologies. Says Nicholson, "I'm skeptical about this moving forward without incentives for utilities to make these investments." **55643**

Research Links

[redacted]

Sample Systems

SHORT-TERM WEATHER ANALYTICS

Vendor: IBM

Location: Armonk, N.Y.

What it is: IBM is developing model-based software called Deep Thunder that's designed to help utilities determine in advance where they may need to send repair crews during a storm. The software provides a detailed analysis of locations where thunderstorms are likely to occur and which transformers and other equipment might be vulnerable.

DEMAND RESPONSE SYSTEM

Vendor: EnerNOC Inc.

Location: Boston

How it works: EnerNOC sells a combined hardware/software system to commercial and industrial electricity customers that are enrolled in voluntary energy reduction programs with their local utilities. If a utility needs customers to reduce their electricity consumption during a heat wave, it contacts EnerNOC. EnerNOC then sends a signal to the customer's utility meter advising it to reduce consumption. Also, EnerNOC's Site Server, a Linux-based system that's built on a J2EE platform, can turn off a customer's nonessential lighting or air conditioning units remotely from its Boston operations center via the Internet.

ENTERPRISE NOTIFICATION SERVICE

Vendor: EnvoyWorldWide Inc.

Location: Bedford, Mass.

How it works: A message from a utility's energy management system is sent to EnvoyWorldWide. That message tells EnvoyWorldWide to contact commercial customers enrolled in an energy reduction program and advise them that they need to curtail power consumption. The EnvoyWorldWide notification system, which runs on HP DL360, DL380 and DL580 machines running Windows 2003 Server software, has a list with the names of the people to contact and information about how they want to be contacted. If the first person listed at a particular site doesn't respond, the rules-based system contacts the next one on the list.

Continued from page 21

progress toward a more reliable grid, say Fitchett and other industry executives. For starters, the electric industry needs a stable communications backbone so that relays and other devices on the grid that sense problems like generation overloads can communicate more effectively and reliably with one another.

The current communications infrastructure used by the U.S. electric industry is multilayered. RTOs that operate regional grids each run primary and backup voice and data networks both within their regions and between other RTOs and themselves, says Michael Bryson, manager of transmission at Valley Forge, Pa.-based PJM Interconnection LLC. PJM is an RTO that supports 51 million people in 13 Eastern states and the District of Columbia.

In addition, many utilities have implemented their own private data networks so that in the event of any disruptions to public networks, "there's still communications within the electric industry," says Bryson. In 2000, for example, PJM implemented PJMnet, a private frame-relay network that carries the bulk of its computer data and some of its voice support. PJM uses public data networks as a backup to PJMnet, he says.

Besides concerns about the reliability of public data networks, utilities also have security issues to contend with. As power companies begin to install intelligent sensors on transformers and other pieces of equipment to communicate information about outages and other problems using public networks, systems become more vulnerable to cyberterrorists, notes Bryson.

The most secure form of communications involves fiber-optic technology. But it's expensive — it can cost a $20,000 to $30,000 per mile to connect electric substations with a control center, "and some of our stations are 40, 50 miles apart," says Fitchett. Besides, there's a reluctance among utilities to invest in fiber optics, since there isn't a clear return on investment, he adds.

Relay Rewind

Meanwhile, wireless communications networks could be cheaper to use than fiber-optic networks, but they have reliability and security shortcomings, says Fitchett.

"What a lot of utilities are beginning to realize is that we're going to need a hybrid system, like a Wi-Max to a mesh network of 800 MHz — maybe even some power line technologies," such as broadband-over-power-line communications systems, says Fitchett.

Bryson says he believes the power industry will move toward a publish-and-subscribe communications system over the next five to 10 years. Such systems are more efficient than IP-based networks, since utilities that subscribe to them access only the information they need, he says.

Smart Sensors

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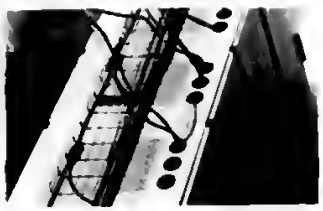

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Jim Turner
Cisco
Chairman, DMTF

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- Understand core management technologies such as CIM (Common Information Model), WBEM (Web-Based Enterprise Management) and SMASH (Systems Management Architecture for Server Hardware) as well as other leading initiatives in key areas including Utility Computing
- Learn about other technologies and the latest tools and applications
- Take away actionable information for making better data center and enterprise management decisions with speed and confidence
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- Network with other IT executives and budgeted implementors to meet potential partners and converge with the industry-wide analyst and press community
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MONDAY, SEPTEMBER 12

Registration Open 7:00am - 8:30pm

10:00am – 11:00am	**Industry Primer**
11:00am – 12:00pm	**Analyst Overviews**
Noon – 1:00pm	"Birds of a Feather" Lunch
1:00pm – 5:00pm	**Concurrent Tracks; Voice of the User, DMTF Technical Tutorial and Deployable Solutions Tracks**
7:00pm – 9:00pm	Welcome Reception

TUESDAY, SEPTEMBER 13

Registration Open 7:00am - 8:00pm

7:00am – 8:00am	Breakfast
8:00am – 8:15am	**Opening Remarks**
8:15am – 9:00am	**Dynamic IT/Dynamic Enterprise: What the Next Generation IT Looks Like and How Customers Are Attacking the Migration** Frank Gens, Senior Vice President, Research, IDC
9:00am – 12:00pm	**General Sessions**
Noon – 1:30pm	Luncheon
1:30pm – 3:15pm	**General Sessions**
3:15pm – 3:30pm	Break
3:30pm – 5:20pm	**Concurrent Tracks; Voice of the User, DMTF Technical Tutorial and Deployable Solutions Tracks**
5:30pm – 8:30pm	**Expo and Technology Showcase with Dinner**

WEDNESDAY, SEPTEMBER 14

Registration Open 7:00am - 6:00pm

7:00am – 8:00am	Breakfast
8:00am – 8:15am	**Opening Remarks**
8:15am – Noon	**General Sessions**
12:00pm – 1:30pm	**Expo and Technology Showcase with Lunch**
1:30pm – 3:15pm	**IDC Analyst Briefing**
3:15pm – 3:30pm	Break
3:30pm – 5:20pm	**Concurrent Tracks; Voice of the User, DMTF Technical Tutorial and Deployable Solutions Tracks**
5:30pm – 6:30pm	**Expo and Technology Showcase**
7:00pm – 9:00pm	**Gala Evening with "Best Practices" Awards Ceremony, Dinner and Entertainment**

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- ☐ Manager/Other IT Manager
- ☐ Supervisor

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- ☐ Executive VP/ Senior VP, VP/ General Manager
- ☐ Director, Manager
- ☐ Other Corporate/Business Manager

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- ☐ 20,000 or more
- ☐ 10,000 - 19,999
- ☐ 5,000 - 9,999
- ☐ 1,000 - 4,999
- ☐ 500 - 999
- ☐ 100 - 499
- ☐ 50 - 99
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- ☐ $50 Million - $99.9 Million
- ☐ $10 Million - $49.9 Million
- ☐ $1 Million - $9.9 Million
- ☐ $500,000 - $999,999
- ☐ $250,000 - $499,999
- ☐ $100,000 - $249,999
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THANKS FOR THE FUTURE MEMORIES

Chip makers are searching for the Holy Grail: cheap, fast, 'universal' memories to replace DRAM, SRAM and flash. BY ROBERT L. MITCHELL

FUTURE WATCH

FOR COMPUTER manufacturers, Moore's Law has been about getting something for nothing, and not just in processor chips.

For 40 years, systems designers have seen memory densities double every 18 to 24 months while memory chip prices have remained essentially flat, cutting the cost per bit in half each time. As the technical challenges of building ever-smaller memory cells in silicon have increased, however, some memory manufacturers have predicted that the cost curve will start to swing the other way before the end of the decade.

Researchers are working on several alternate technologies that could eventually replace those in the three memory types commonly used today: low-cost dynamic RAM (DRAM), used in PCs and servers; fast static RAM (SRAM), used for processor caches and mobile devices; and nonvolatile flash memory, used in everything from computer BIOSs to cell phones.

Researchers at IBM, Intel Corp. and other companies envision the development of a universal memory technology that could someday replace all three. "That's the Holy Grail," says William Gallagher, senior manager of exploratory and nonvolatile memories at IBM.

A universal memory technology could change how computers are designed, Gallagher says. For example, nonvolatile RAM could allow computers to boot up and power down instantly because stored information wouldn't be lost when power was. But the emergence of a universal memory technology is probably at least 10 to 15 years away, Gallagher says.

Others argue that a universal memory isn't possible because one memory type can't satisfy all needs. For example, nothing could be the fastest and cheapest at the same time.

Most research today is focused on addressing the limitations of one memory technology at a time, such as flash. But some attributes of today's technologies will be hard to beat.

"Most technologies will probably not be able to compete on lowest cost per bit [against DRAM] or with the fastest SRAM. So they will fall into that space in between," says Bob Merritt, vice president of memory research at Semico Research Corp. in Phoenix.

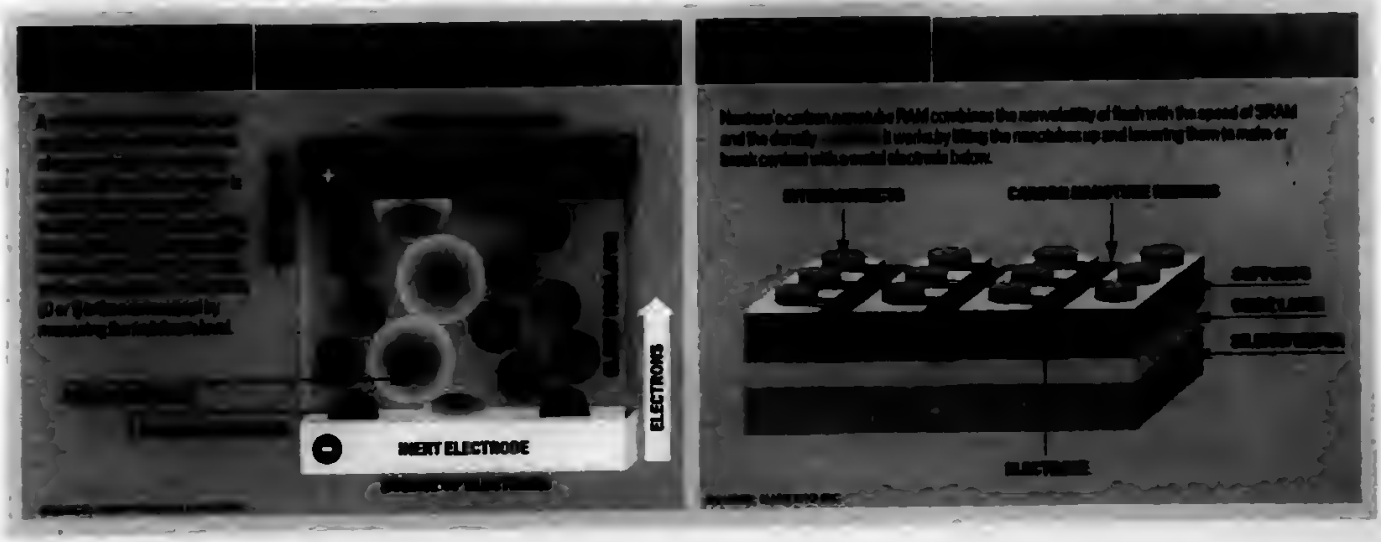
Ferroelectric RAM (FRAM) and magnetoresistive RAM (MRAM) are the best-funded and most-evolved of the emerging memory technologies. FRAM is a nonvolatile RAM that was developed by Ramtron International Corp. in Colorado Springs. It's licensed by Texas Instruments Inc. and others. More than 30 million products have already shipped using FRAM, including metering, radio frequency identification and smart-card devices, according to Ramtron.

FRAM, which is based on nanoscale "quantum dots," uses less power and writes faster than DRAM or flash, and it has a long life span. But the technology remains 20 to 50 times more expensive per bit than DRAM, and chip density is far lower. Ramtron is prototyping 1Mbit parts today and hopes to push the technology to 4Mbit or 8Mbit in 2006. Until MRAM is ready for the market, however, FRAM is the only game in town for nonvolatile DRAM.

MRAM is closer to production than most other experimental memories, and IBM and Freescale Semiconductor Inc. are the leading MRAM developers. Gallagher calls the technology "magnetic storage on a chip" because it adapts the magnetic polarization techniques used in disk drives to silicon.

"It's fast, nonvolatile memory that offers a nice combination of high speed, high endurance and reasonable density," Gallagher says.

Chip samples can be produced at about the same density and cost per bit as flash. But while promoted as universal memory, the density of MRAM doesn't approach that of DRAM or SRAM. Most interest today



is focused on embedded applications.

Several other challengers to conventional memory technologies look promising but are much earlier in their development cycles than FRAM or MRAM.

Phase-change memory (PCM) is a fast, nonvolatile memory that proponents claim could become a universal memory. IBM and Intel have each partnered with other companies to develop the technology.

A transistor in a PCM cell applies energy to either heat or cool the material, forcing it to change between an amorphous (high-resistance) and a crystalline (low-resistance) form. A current is then applied to measure the resistance and establish the state of the memory cell as a 0 or 1.

While PCM technology is much faster than flash, it's slower than SRAM. To be competitive with DRAM, it would also have to support unlimited writes. IBM's research shows that PCM can match flash's 100,000-write limit, but endurance beyond that hasn't been proved, says Gallagher. Ovonyx Inc. in Santa Clara, Calif., however, claims that its technology, called Ovonics, can be written to 10 trillion times, making it useful for DRAM as well as for flash.

Carbon nanotubes — hollow, tube-shaped lattices of carbon atoms — can be used to make a mechanical memory that works by bending the carbon filament up or down to make or break a connection between two electrodes (see illustration, page 25).

"We can combine the nonvolatility of flash with the speed of SRAM and the density of DRAM," says Greg Schmergel, co-founder, president and CEO of carbon nanotube pioneer Nantero Inc. in Woburn, Mass.

The technology can theoretically scale as small as 5 nanometers and has achieved speeds a few times faster than today's DRAM chips. Nanotube chips could be 10 to 15 times smaller than today's DRAM and could offer a tenfold reduction in power consumption. Initial products from partners such as LSI Logic Corp. are still two to five years away, Schmergel says.

Molecular memory, developed by ZettaCore Inc., uses a chemical process to create DRAM memory cells with a molecular capacitor. The "chemically self-assembling" molecules work by adding and removing electrons. This changes the voltage, which is then measured to determine the state (0 or 1). The technique supports four states and can store 2 bits per memory cell.

Molecular memories also require 70% less power than a standard DRAM memory cell because the capacitor can hold 100 times the charge and therefore needs to refresh memory less frequently, says Subodh Toprani, CEO of ZettaCore.

Molecular memory will allow manufacturers to double or quadruple capacity without increasing costs, Toprani says. He says he hopes to have a product available by 2007 or 2008.

Axon Technologies Inc.'s Programmable Metallization Cell memory (PMCm) is a DRAM alternative that's nonvolatile, uses less power and offers higher density than DRAM (see illustration, page 25). In it, tiny quantities of metal self-assemble into a filament as electrons are added to the metal ions. Resistance is then detected to determine the state of the memory cell.

"We don't store information as a charge; we store it as atoms," says Michael Kozicki, co-founder and chief technology officer at Scottsdale, Ariz.-based Axon.

Kozicki says he hopes to have the first "real design" available by 2007. "It looks like we won't cost any more than current DRAM," he says.

Ultimately, the ability to cost-effectively manufacture new memory technologies using existing fabrication facilities may separate the winners from the losers, says Semico's Merritt. To succeed, emerging technology vendors will initially focus on niche markets where they can coexist, rather than compete, with established vendors, and thereby continue to evolve.

"At the moment, all of those [technologies] look very powerful and doable," Merritt says. "But it's always the question of, Do they look so valid because they are, or because we haven't peeled enough layers of the onion yet?" The answers aren't likely to come before the end of the decade.

55526

BIFURCATION BLUES

LOW COST AND HIGH DENSITY are the primary goals for memory for PCs and other AC-powered computers. But battery-powered mobile devices like laptops and cell phones place a premium on low power consumption and nonvolatile memory, which retains data when power is removed.

Today, the memory business is driven less by the PC and more by the mobile sector. "More nonvolatile memory bits will be shipped than volatile memory bits this year," says Bob Merritt, vice president of memory research at Semico Research.

Merritt says diverging market needs are likely to drive memory development in two directions. The market bifurcation could cut into the economies of scale that drive down DRAM prices, and thus the cycle of doubling memory density every 18 months without raising prices could end, he says.

But the high costs of developing and manufacturing memory mean that the industry can't afford to have radically different designs for different markets.

"You can't build a decent fab now for less than $3 billion," says Michael Kozicki, co-founder and CTO of Axon Technologies, so a common technology foundation will be needed. "Whoever wins this memory smack-down is going to end up being the memory that wins in both areas," he says.

– Robert L. Mitchell

MANUFACTURING WOES

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MEMORIES AT A GLANCE

What it promises	Nonvolatile memory that is faster and lasts longer than flash	Low-power, high-density DRAM that integrates into current manufacturing	Nonvolatile DRAM	Fast, nonvolatile, high-density DRAM	Nonvolatile DRAM alternative; fast, universal; easily integrated	Nonvolatile, high-speed, unlimited endurance; low power consumption
Applications	Flash, DRAM alternative	Embedded memory; conventional DRAM alternative	Mobile electronics; ultra-low-power systems; embedded nonvolatile memory with logic	Replace all existing memories (DRAM, flash, SRAM); replace hard drives	Replacement for flash and SRAM	High reliability in extended environments (automotive, industrial controls, RAID, office and medical equipment)
Challenges	Requires higher programming current; more costly than flash	Must be proved in manufacturing	Hasn't been manufactured yet	Improving manufacturing yield	Low density, high cost	Higher cost and lower density than DRAM
Primary backers	IBM, Infineon Technologies, Macronix International, Intel, Ovonyx, Samsung, STMicroelectronics	ZettaCore	Axon Technologies, Micron, Infineon	Nantero, LSI Logic	IBM, Freescale Semiconductor, Infineon, Microsemi Technologies, NEC, Toshiba, Samsung, Renesas	Ramtron International, Texas Instruments
Availability	Unknown	2007-2008	2007	2007-2010	Currently sampling	Available now

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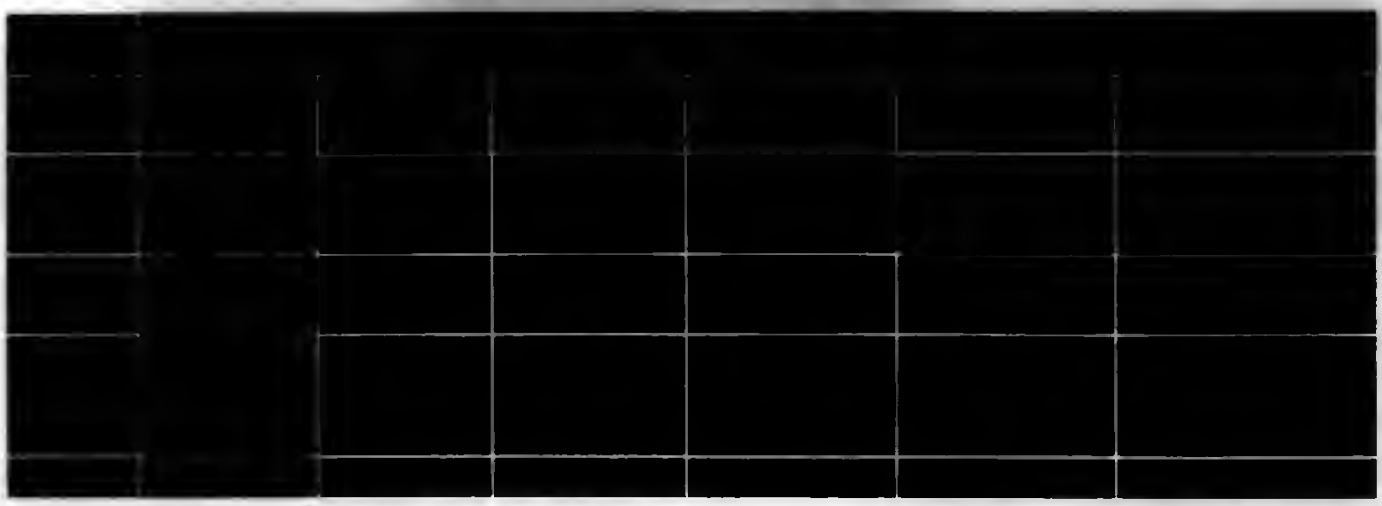


JEFF BEZOS
SAS gives Amazo

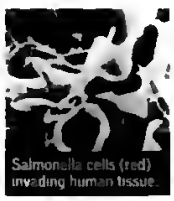
Geek's

A STROLL THROUGH THE TECHNOLOGY LANDSCAPE

No More Playing Chicken With Bacteria

■ **RESEARCHERS AT THE U.S.** Department of Agriculture's Agricultural Research Service are working to improve computer models that help ensure that the chicken salad you buy from your local market is safe – and save food processing companies a lot of money as well.

Specifically, they're creating programs that analyze computer models of the growth and survival of campylobacter and salmonella – the two most common bacterial food pathogens – on chicken, which is the most consumed meat product in the U.S.



Salmonella cells (red) invading human tissue.

Working in the relatively new field of predictive microbiology, the scientists are homing in on the models that best forecast the behavior of food-borne pathogens in response to environmental conditions in food production and processing operations. Models are used by processors and regulatory agencies to make proper decisions about food safety.

With more than 1.4 million cases of salmonellosis food poisoning reported annually in the U.S., and with tons of most likely untainted food products thrown away each year, the stakes are high.

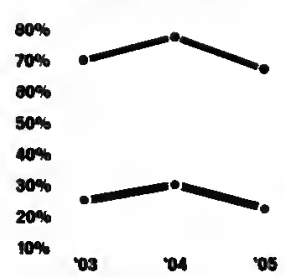
Whaddaya Gonna Do? Getting Used to Spam

■ **E-MAIL USERS** are getting more spam, but they don't seem to mind it as much as they once did, according to a report from the Pew Internet and American Life Project. In a nationwide survey of 1,421 Internet users conducted earlier this year, 21% of the respondents who have work e-mail accounts said they are receiving more spam than they were a year ago, while 16% said they are getting less.

The majority of e-mail users surveyed, 53%, said that spam has made them less trusting of e-mail. When the same question was asked a year ago, however, 62% of the respondents said spam had undermined their trust. More spam, less distrust – go figure.

A whopping 67% of the people who responded to this year's survey said that spam makes being online unpleasant or annoying. But that's a significant improvement over last year's 77%.

THE EFFECTS OF SPAM OVER TIME



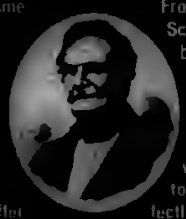
It All Started With Babbage

[illegible] applications in the history of computing technology that have made a significant difference, it seems appropriate to start with the original Difference Engine, first conceived in 1822 by the eccentric British mathematician Charles Babbage.

Babbage was looking for a way to mechanize the calculation of mathematical tables – logarithmic and trigonometric functions, for example. Tables were created by human beings working slowly with pencil and paper, and Babbage was convinced that errors could be eliminated by automating the process.

Impressed by Babbage's plans for his invention, the British government provided funding for the project but grew impatient with its slow progress and withdrew support several years later. By that time, Babbage had abandoned the original Difference Engine to work on his ideas for a more sophisticated Analytical Engine.

Between 1847 and 1849, Babbage returned to his original invention and produced improved plans for Difference Engine No. 2. Alas, the revised design wasn't built in Babbage's lifetime, either – partially because of problems with machining accuracy and funding, but mostly because he couldn't bear to stop tinkering with the design.

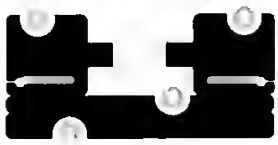


Babbage's work, however, inspired Per Georg Scheutz to build several Difference Engines, and he even sold one to the British government in 1859.

From 1989 to 1991, the London Science Museum used Babbage's original drawings to painstakingly construct the first complete Difference Engine No. 2. The device was constructed in accordance with 19th-century machining tolerances and worked perfectly. The Difference Engine was able to produce calculations to 31 decimal places of accuracy. Such calculations did, however, require the operator to turn a mechanical crank hundreds or even thousands of times. 55673

GROVES OF ACADEMIA

Berkeley Leads the Way to Little, Liquid Computing



1. Source reservoir
2. Gate metal
3. Drain reservoir
4. Source electrode
5. Drain electrode
6. SiO_2 layer
7. Si

■ **AT THE** University of California, Berkeley, researchers have created the first "nanofluidic" transistor, a device that allows them to control the movement of ions through submicroscopic, water-filled channels.

Just as the electronic transistor became the main component of microprocessors and integrated circuits, nanofluidic transistors will anchor molecular processors, allowing microscopic chemical plants on a chip that will operate without moving parts, say the inventors, mechanical engineering professor Arun Majumdar and chemistry professor Peidong Yang.

Cancer diagnosis is one of the early applications of the technology being explored by Majumdar and Yang. A nanoscale chemical analysis chip could, theoretically, take the contents of just 10 cancer cells and pull out protein markers that could alert doctors to the best way to attack the cancer.

The research team is investigating whether nanofluidic transistors will have the same capabilities as the metal-oxide semiconductor field effect transistors used in most of today's microprocessor chips, says Yang, though the new invention is a different information-processing device because it works at the molecular level.

Nanofluidic transistors could be made with the same technology used to produce integrated circuits, says Majumdar. And nanofluidic channels could be integrated with electronics on a single silicon chip, he adds.

Yang and Majumdar say their goal is to develop the first integrated circuit using nanofluidic transistors.

Page compiled by Tommy Peterson.

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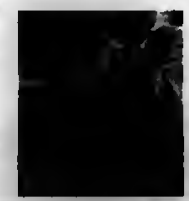

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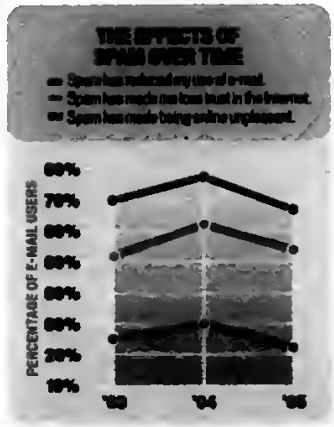

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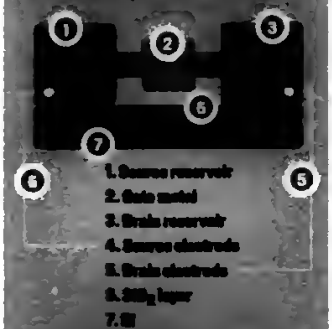

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DIFFERENCE ENGINES

User's End Run Around VPN Leads to New Push

A worm crawls into the network when the VPN is accessed improperly. What can be done to avoid a repeat? By Mathias Thurman

ONCE AGAIN, I spent most of my week dealing with an outbreak of malicious code, and I'm now taking steps to avoid a similar problem in the future. This time, we were hit with the W32.Mytob.HH@mm worm. We had been hit with a similar worm a few weeks earlier; the main difference is that this version uses different ports to connect back to the Internet Relay Chat (IRC) channel.

SECURITY MANAGER'S JOURNAL

Our intrusion-detection guru traced the infestation to a user connecting to the corporate network via the VPN from a local airport. I talked to the user, and he told me that he bypassed the recommended method of gaining remote access when he associated to a wireless access point at the airport. When he booted up his laptop, the access point showed up in his task bar, and he was automatically connected without any authentication.

The user said he did some work on the Internet before launching the VPN client, and that "work" included executing an .exe file from an e-mail he got stating that his account had been terminated. He had assumed the e-mail was from our human resources system; he had previously gotten a message directing him to change his password for the system, but he hadn't gotten around to doing that. When he clicked on the link called "account-details.exe," nothing seemed to happen.

Well, we now know exactly what happened. His laptop was infected, and when he connected to the corporate VPN, the worm propagated to our internal network.

We tell users that the proper method for remote access, especially when traveling, is to use iPassConnect Universal Client from Redwood City, Calif.-based iPass Inc. We have configured iPassConnect so that after a user authenticates, it checks the system to ensure that both a desktop firewall and our virus-checking client are installed and running.

We also have the iPass client time out if the user doesn't authenticate to our corporate VPN within two minutes.

In addition, our VPN client forces the user to input his username and RSA SecurID token for authentication. Chances are good that if the user had followed these procedures at the airport, the malicious code he executed would have been spotted.

To enhance the security of our VPN infrastructure, we are installing Sunnyvale, Calif.-based Fortinet Inc.'s FortiGate appliance. We're already using these devices to protect our development lab environment, or rather to protect the corporate environment from the lab environment. At the insistence of the lab managers, our development labs don't conform to our corporate policies regarding host and network security, and things such as virus protection, patches, configuration management and secure baselines aren't used. The lab managers feel that they must be free to set up their environment as needed to properly test products.

> **We can't vouch for the security of systems accessing the VPN. Employees don't follow the rules.**

Containment

Instead of fighting with them to conform, we decided it would be best to position one of the FortiGate appliances between the corporate network and the lab. Our hope is that if lab resources become infected, we can contain the infestation to the lab network.

This same reasoning is now being applied to the VPN segment. We can't vouch for the security of systems accessing the VPN. Employees don't follow the rules. We know that some of them have installed VPN software on their home systems. We've even seen cases of employees installing VPN software on systems in kiosks, libraries and customer sites. It's pretty ugly.

We're working on a method to ensure that only authorized company assets are permitted VPN access, but until we do some testing, we have to live with the current configuration.

Although the FortiGate appliance is ideal for detecting viruses, worms and Trojan horses, it can detect only what it knows about. It monitors all the network traffic that passes through it and looks for patterns or signatures that match what it knows to be "bad."

The problem is that some malicious code can be delivered in what is termed a "zero-day" attack, meaning that the code is written as soon as a vulnerability is identified, and it's sent out into the world before there are any antivirus signatures for it. Such malcode is easily propagated until the antivirus companies can get a hold of the code and write a signature.

With this problem in mind, I'm considering using a host-based intrusion-detection system, or HIDS. Almost all HIDS products "learn" the normal activity of a system. System calls, key-file manipulation, services, activity in the registry (if Windows NT), applications, network activity and several other areas are monitored for a period of time.

Once you put the HIDS into action, departures from normal activity are detected and action can be taken. So, for example, in the case of a zero-day worm, if the worm installs a new service, modifies the host file or opens a back channel to some obscure IRC server on the Internet, the HIDS will detect that activity, regardless of whether a signature has been written.

I haven't deployed a HIDS yet. The last time I tested these products, the HIDS agents caused an excessive amount of CPU utilization and our desktop firewalls had to be disabled. I decided at the time that deploying this technology to thousands of workstations wouldn't be in the best interest of the company. But I'll take a look at the HIDS product landscape within the next couple of weeks to see how the market has changed.

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com, or join the discussion in our forum: QuickLink a1590

To find a complete archive of our Security Manager's Journals, go online to computerworld.com/secjournal

SECURITY LOG

Security Bookshelf

Oracle Encryption Questioned

CA Acquires Qurb

BRIEFS

Symbol Announces Wireless Bridge

■ Symbol Technologies Inc. in Holtsville, N.Y., has announced the CB3000 Client Bridge, a device aimed at providing large companies with wireless connectivity in areas where installing Ethernet cable isn't an option. The bridge can link 16 Ethernet-enabled devices to a network, including printers, medical equipment, manufacturing machinery, time clocks or point-of-sale systems. It works over 802.11a, b and g networks and is priced at $285.

BEA Enhances SOA in Tuxedo 9.0

■ BEA Systems Inc. has announced the general availability of BEA Tuxedo 9.0, which enhances security and support for service-oriented architectures to its high-end transaction-processing software. New features include tighter integration with BEA's WebLogic application server to provide cross-platform interoperability and integration with the AquaLogic enterprise service bus and Web services management tools, according to the company. The new version also includes features to boost security and quality of service. Pricing information wasn't available.

Mobius Updates Integration Tool

■ Mobius Management Systems Inc. has unveiled Version 2.2 of its ViewDirect Total Content Integrator Web-services-based software, which allows access to content in any format from any source. The update adds connectors that allow ViewDirect to be used with content management applications such as IBM's DB2 Content Manager OnDemand, EMC Corp.'s Documentum and Microsoft Corp.'s SharePoint and SQL Server, according to the Rye, N.Y.-based vendor. The software starts at $80,000, plus $20,000 per repository adapter.

DOUGLAS SCHWEITZER

A Convert With a Crush on His Mac

THIS MONTH, I celebrate an anniversary. No, not my wedding anniversary; that was last month. This anniversary marks my second as a Mac convert. Over the past two years, my Mac has lived up to all its promises and has never ceased to delight me.

One of the main reasons for my initial interest in the Mac was security. Having spent countless hours repairing my family's, friends' and co-workers' computers after the ravages of malware, it occurred to me that there must be a better alternative. With its Unix core, the Mac OS X operating system was very appealing to me.

Yeah, I tried several flavors of Linux but never could get any of them configured precisely the way I wanted.

When it comes to raw, out-of-the-box security, the Mac has you covered from the minute you plug it in. Most ports are closed by default, and like Windows XP, OS X comes with a built-in firewall that can be enabled with a few mouse clicks. As far as malware is concerned, well, there are very few viruses or pieces of spyware written that can infect a Mac machine. This isn't so for the PC. In fact, security vendor Sophos estimates that a brand-new, unprotected PC has about a 50-50 chance of getting infected within its first 12 minutes online. The Mac OS makes it hard for malware to get through.

For example, one of the ways malware is able to "hide" from users under Windows is via hidden file extensions. Many users aren't aware that even if you tell Windows to display all file extensions, there are still some that are hidden by default. To make matters worse, a Trojan horse or any installed program can reconfigure your extensions so that they are no longer hidden.

Under OS X, you aren't permitted to hide a file's "real" extension if hiding it causes the file to appear to have a different extension. Furthermore, if you attempt to append an extension onto an application's true extension, the true extension will become revealed and you won't be able to hide it.

Let's say you have a file called MyApp.app. The common .app Mac extension is hidden by default. If you were to alter the .app extension by appending .jpg to the end of it, you would see MyApp.app.jpg without any changes to the operating system's default configuration. If you were to change the extension to read MyApp.jpg.app, the application would cease to work.

Another thing that helped in my decision to try a Mac was the abundance of applications available for OS X. My non-Mac constituents had warned me that there were so few Mac applications that I'd be certain to regret my switch. In fact, the most common justifications for not buying a Mac consist of a lack of software, a lack of games and compatibility issues. These excuses are simply myths and have no basis in fact. Just take a look around; there are thousands of applications available for Macs.

According to systems integrator James Clemens at the Babylon, N.Y., public library, his recent addition of eMacs into the library's large Windows environment proved that Macs could play just fine with PCs. From running Microsoft's Office suite to doing your taxes via TurboTax or TaxCut, Macs can do it all. When it comes to music, OS X has you covered, too. iTunes allows you to quickly build a playlist and burn that to a CD with just a few mouse clicks.

Don't get me wrong — I love Windows XP, and with all the changes of late, it's a secure and fairly stable operating system. But after two years of continuous operations, I've had to restart my Mac only once because it froze. And if total cost of ownership has you worried, fear not. In my experience, Macs are more stable and require less technical support than their Windows or Linux counterparts.

Whether it's freezing screens, blue screens, malware or spyware that has you down, be glad that an alternative is available. As cybersecurity and awareness guru Winn Schwartau says, "You don't have to take it anymore." So maybe it's time you gave Mac OS X a try. As I like to say, once you go Mac, you never go back! **55803**

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BPO: Big Political Opportunity
IT execs like Emcor's Peter Baker have the comprehensive view, process know-how and experience to take the lead in business process outsourcing. Here's how to do it — and why you should. **Page 33**

Think Tank
RFID is everywhere. Get ready for a world where RFID chips can be used to track food ingredients, fruit, shopping carts, soldiers, construction tools and gambling chips. **Page 36**

Career Watch
Hewlett-Packard CIO Gilles Bouchard answers readers' questions about pursuing training and getting that first IT job. Also, learn who really loves the IT department and whether offshoring is as prevalent as most people think. **Page 37**

LOST, STOLEN OR STRAYED

The missing link in data security may have four wheels and a gas tank.

By Gary H. Anthes

MOVING MAGNETIC TAPES in and out of storage would seem to be the most mundane of IT functions. Indeed, companies have traditionally seen the transportation and storage of backup media as so routine that they have relegated it to non-IT personnel such as couriers or outsourced the job entirely. But that's changing now, following a rash of high-profile horror stories involving lost data that have been compounded by legislatures and courts that no longer buy the "the dog ate my tapes" excuses.

AN OUNCE OF

In February, Bank of America Corp. lost a tape with credit card information on 1.2 million customers. In April, Ameritrade Holding Corp. told 200,000 current and past customers that a tape containing confidential account information had been lost or destroyed in transit. Time Warner Inc. reported in May that 40 tapes containing personal data on 600,000 current and former employees had been lost en route to a storage facility. In June, Citigroup Inc. said that a box of tapes holding personal information on 3.9 million customers had disappeared on the way to a credit bureau.

And sometimes tapes go missing inside a company's four walls. In March, a Florida judge hearing a $2.7 billion lawsuit by financier Ronald Perelman against Morgan Stanley issued an "adverse inference order" against the company for "willful and gross abuse of its discovery obligations."

The judge cited Morgan Stanley for repeatedly finding misplaced tapes of e-mail messages long after the company had claimed that it had turned over all such tapes to the court.

In theory, there are straightforward ways to avoid these costly and embarrassing mishaps. But those measures, such as data encryption and backing up to remote sites via secure networks, have serious drawbacks, so it's likely that trucks full of tapes holding sensitive information will be roaming the roads for years to come.

RISK IS NEVER ZERO

Driven in part by regulatory requirements, Excel Energy Inc. in Minneapolis backs up data to tape "in terabytes per week," according to Mike Carlson, vice president of business transfer and customer value. The tapes are taken off-site and stored by Iron Mountain Inc., a Boston-based records management and storage company.

Asked if his company is taking any special steps as a result of the recent highly publicized tape mishaps — Iron Mountain acknowledged that it lost the Time Warner tapes — Carlson says, "We are actively working with them to ensure that it's not a systematic glitch that puts us at risk." Nevertheless, there will always be some risk of human error, he says.

Iron Mountain performs at a 99.999% level of reliability in its media transportation and storage operations, says Ken Rubin, executive vice president for marketing. "Over the past 50 years, we have honed a chain of custody and inventory control process," he says. "We have basically automated out of the process nearly all of the exposure to human error, but not 100% of it."

A tape goes through several distinct phases as it moves between Iron Mountain and a customer, and each step is recorded via bar-code scans, Rubin says. There are other protections as well, such as special security systems and alarms in the company's trucks. Iron Mountain recently completed an audit of all its facilities and processes and pulled from service a few trucks that failed inspection, Rubin says.

Iron Mountain offers service-level agreements, such as one that guarantees times for returning a tape requested by a customer. But the company follows the standard industry practice of limiting its liability to the value of the physical media in its possession, not the content of the media. "The fees that Iron Mountain and all the vendors charge — basically pennies per tape per month — are nowhere near what would be required to take on any more liability than just for the media," Rubin says. Customers could buy separate insurance for content, but few do, he adds.

Rubin says the "best and most practical" way to protect confidentiality is to encrypt sensitive data before it's written to tape. And, he advises, "make sure that your methodology for moving tapes off-site has the best chain-of-custody processes imaginable."

Carlson says he has looked into Iron Mountain's Electronic Vaulting service, by which backup data is automatically encrypted and sent over a network to Iron Mountain. But the service isn't cost-effective for the very large amounts of data Excel Energy backs up, he says. Iron Mountain agrees that the service isn't practical for large backup needs.

Carlson says it's faster and cheaper to ship large amounts of data on tape via air or truck than it is to transmit it electronically. IBM runs a disaster recovery center on the East Coast for Excel that would require eight hours to bring online. That's easily enough time to fly tapes there from Excel's Colorado data center or from Iron Mountain, Carlson says.

Last year, nearly three quarters of 388 companies polled by Enterprise Strategy Group Inc. (ESG) in Milford, Mass., said they infrequently or never encrypt backup data written to tape.

In a report, ESG said it was surprised to learn that government agencies and big financial services companies are among the organizations least likely to employ backup encryption. "Bank of America did not encrypt its backup tapes and thus suffered an operations and public relations debacle, the costs of which may ultimately far exceed the cost and operational overhead of encrypting its backups," the research firm said.

NEGLECTING STORAGE SECURITY

According to ESG, companies spend far more on network perimeter security than on storage security. But the report said that "the onslaught of publicly reported security breaches and impending legislation will cause a profound change in security investment priorities."

According to Steve Kenniston, vice president for corporate strategy at Iron Mountain, encrypting backup data takes time, and with an explosion in data at most companies, the time windows for backups are already squeezed. Although encryption offers better data security, he says, it may adversely affect data protection — that is, making sure backup data is available quickly and easily for recovery purposes.

Kenniston urges his customers to consider classifying data according to its function and sensitivity. For example, the most sensitive data, such as payroll records, might be encrypted and/or electronically vaulted, whereas other data might not justify the cost of those measures. But this kind of data discrimination isn't something IT shops have typically done as part of their backup processes, he says.

Rent-A-Center Inc., a Plano, Texas-based chain of 3,000 consumer-goods rental stores, produces 30 to 40 unencrypted backup tapes every day and turns them over to Iron Mountain. The company is now implementing a "stem-to-stern encryption process" based on 128-bit keys and hash signatures, which can be used to reveal whether the contents have been altered, says K.C. Condit, director of technical services.

"There is some overhead with encryption," which is why the company hasn't done it until now, says Condit. "There have been some technology concerns and some people concerns as well. But we are getting to the point that you really can't afford not to do it."

Meanwhile, Prince William County in Virginia is scrapping its tape backup system in favor of backing up data to disk over a secure network to a remote site owned by the county. CIO Masood Noorbakhsh says the goals are to decrease the time it takes to run backups and restores and to increase security. Because it's a private network, it won't be necessary to encrypt the data in transit, he says.

Church Mutual Insurance Co. in Merrill, Wis., produces about 10 backup tapes per day, and its employees move them to the basement of a bank two miles away. Using a company such as Iron Mountain would offer some advantages, says CIO Christopher Graham, but it would cost more.

Church Mutual typifies the many companies that have yet to join the embarrassed ranks of Bank of America, Time Warner, Ameritrade and Citigroup. "Management right now thinks that what we have in place is adequate," Graham says. "Nothing bad has happened yet, so why spend more money?" 55560

BPO: BIG POLITICAL OPPORTUNITY

Business process outsourcing gives CIOs a chance to lead. By Mary Brandel

IN THE PAST FEW MONTHS, Peter Baker has conducted interviews with a handful of business process outsourcing (BPO) providers and invited a couple of them back to Emcor Group Inc.'s headquarters for further conversation. Emcor, a $4.7 billion construction and facilities maintenance company in Norwalk, Conn., has on solid plans to engage a BPO provider; Baker, director of applications, is simply keeping on top of the BPO trend. "We're six months away from even having any senior executive at Emcor agree to an audience," he says.

This is exactly the kind of activity and analysis IT executives should be engaged in during this BPO-crazed era, experts say. BPO providers are on the hunt for fresh deals, and if IT doesn't take the lead, it could get left out of the conversation. Then it would have to deal with the terms of whatever contract was signed.

"If they were to get to an executive and sell them on something that IT would have to implement, we'd have to do a lot of backtracking and backpedaling," Baker says. And although BPO providers such as Hewlett-Packard Co. say they often start their BPO conversations with the CIO, others say there's a tendency to sidestep IT until later.

"It happens all the time," says Vinnie Merchandani, CEO of Deal Architect Inc., a Tampa, Fla.-based consulting firm that helps clients negotiate technology contracts. BPO providers "like to go straight to the end user because the margins are better and there's less to negotiate."

But it's much more advantageous for IT to be involved at the front end, says Phil Fersht, an analyst at The Yankee Group in Boston. "The CIO has to ensure he's the No. 1 point of contact with the CEO and CFO when the decision is being made, or risk getting caught in the tide," he says.

> **"[BPO] vendors deal with people they know are not good at managing vendors, and they take advantage of it."**
>
> PETER BAKER, DIRECTOR OF APPLICATIONS, EMCOR GROUP INC.

And the tide is rising. Gartner Inc. projects that spending on BPO will grow worldwide from $112.9 billion in 2003 to $176.1 billion in 2008. Leading the trend are CEOs and chief financial officers targeting noncore business processes to shave expenses, and BPO providers hoping to supplement their IT outsourcing businesses.

While taking the lead in BPO discussions is partly a defensive move for CIOs, they also have a lot to offer from both a technology and a business perspective. In fact, according to Patrick Grady, CEO of Rearden Commerce Inc., a BPO-enabling technology provider in San Mateo, Calif., only the CIO can help companies avoid costly BPO disasters.

For example, Grady says that too many BPO vendors are offering more than they can provide with traditional host-based technology platforms. Over time, he says, as vendors add more customers and have to make modifications to applications, service levels will inevitably fall off. "It looks like a win to the CFO," Grady says, "but if the BPO vendor is hemorrhaging, it's going to come back to bite the customer."

In Grady's view, only the CIO or an IT architect can appreciate how the underlying technology capabilities will affect the vendor's ability to meet its end of the bargain over the long term.

Front-End Concerns

And there are other technology factors to consider at the outset of the deal. For example, are you outsourcing just the business process side, the application or the entire infrastructure?

"Even if you're leaving the infrastructure and application in-house, you need to consider factors like security, risk management and data integration with other systems and processes," says John Dick, CIO at Regions Financial Corp. in Birmingham, Ala.

Other CIO-level concerns include data access, impact on bandwidth and contractual compliance with the other technologies in the environment, says Marc Schwartz, worldwide vice president of BPO at HP Services.

Technology isn't the only area where CIOs can help on these deals. The IT leader is also often the process expert in the company, knowing better than anyone else how various departments, processes and systems interrelate.

"IT is the only department that touches every other department," Baker says, joking that the IT department's name should be changed to the "business process office."

That's the situation at Siemens Medical Solutions in Malvern, Pa. CIO David Rice says his IT department is heavily focused on what it calls its business process model. "Everyone is clear on what the business process owner does and the relationships between various business processes. Everyone knows the model in their sleep," he says.

If Siemens Medical were to decide to outsource a business process, Rice's group would have particularly keen insight into which processes would be easiest to break off, in terms of interdependencies with other departments.

Managing the Wolves

A third area where CIOs are crucial is in the negotiation of the BPO contract. "These vendors deal with people they know are not good at managing vendors, and they take advantage of it," says Baker.

BPO deals can be so complex that even getting internal constituents on the same page is a challenge. "One person might think the goal is improving throughput, while another is thinking cost reduction. Or maybe there's a way of structuring a deal to get immediate [expense relief] and then bring it back in-house," Rice says. "You have to ensure everyone has the same understanding."

Because of their experience in IT outsourcing, CIOs are often more familiar with these critical issues than their business counterparts are.

When CIOs help their companies succeed at BPO, the benefits flow both ways. Adding a successful BPO deal to his résumé can't help but enhance a CIO's career prospects. And ignoring the trend can have the opposite effect. "It's here to stay," Fersht says, "and if you don't understand it, you'll suffer in your own career development." 55506

Brandel is a Computerworld contributing writer in Newton, Mass. Contact her at marybrandel@verizon.net.

Be Prepared

Your company isn't considering business process outsourcing yet? That doesn't mean it won't happen – and it could be sooner than you think. Here are some ways to prepare:

- **Understand what BPO means** and the dynamics of why corporations are doing it.
- **Engage sourcing providers** to start an initial dialogue about what they have to offer.
- **Research BPO benchmarks** and test cases.
- **Know your company's business processes** and maintain a comprehensive and up-to-date view of them.
- **Talk with colleagues** about their BPO experiences and insights.

– *Mary Brandel*

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ThinkTank

BRAIN FOOD FOR IT EXECUTIVES

RFID Is Showing Up on Food, Tools And Casino Chips

A RECENT REPORT from Forrester Research Inc. says that eventually, the radio frequency identification market as we know it today will disappear. Why? RFID will move beyond the supply chain and simply become a sensor technology embedded in a wider variety of business processes, such as "predictive maintenance" and real-world market research.

For example, Northfield, Ill.-based Kraft Foods Inc. uses RFID-tagged containers to track the location and freshness of the ingredients it uses. A grocery retailer can use RFID-tagged shopping carts to monitor and analyze shopping patterns in the aisles. Several firms are using RFID chips to keep track of expensive tools that tend to "walk off" construction job sites. Gaming Partners International Corp. in Las Vegas has already sold 3 million RFID-embedded gambling chips to casinos to fight counterfeiting.

Marsha Thomson, IT minister of the state of Victoria in Australia, returned from a trade fair in Japan predicting a world where sensors are everywhere. She says she saw RFID chips "the size of glitter" that could be sprinkled on enemy forces during warfare and used to track troop movements.

She also saw RFID used in fruit shipments. The chips contained information such as the fruit's country and farm of origin, batch number and use-by date. They also identified any chemicals it may have been treated with if it wasn't organically grown.

– Mitch Betts and Michael Crawford (Computerworld Australia)

Best Bits

The most useful parts of recent business and IT management books

THE BOOK: Thinking for a Living: How to Get Better Performance and Results From Knowledge Workers, by Thomas H. Davenport *(Harvard Business School Press, 2005).*

They like to be left alone, you can't tell them what to do, and they don't particularly want to be managed. Their work is often unstructured – different every day. They tend to be mobile and work in collaborative networks. They're called knowledge workers, because their primary job is to create, distribute or apply knowledge. It's a class of workers – at least 25% of the U.S. workforce – that includes doctors, lawyers, strategists, managers, programmers and marketers.

So far, corporate management has pretty much kept its paws off these think-for-a-living employees because Industrial Age productivity-enhancing techniques don't work. But Babson College IT and management professor Tom Davenport argues that the laissez-faire approach isn't good enough anymore. He joins management guru Peter Drucker in saying that the challenge of our times is to find ways to improve the performance and results of these knowledge workers, because they're the key to organizational growth and economic success. Knowledge workers are the ones who come up with new business strategies and products. They're also the most expensive employees in the company.

Davenport acknowledges that managing knowledge workers is like herding cats, but he asks us to imagine how much better our organizations would be if we could help them be more effective. And that's where IT comes in. This book has a whole chapter on how IT can foster collaboration, share knowledge, embed knowledge in work processes and provide role-specific portals to reduce the amount of time spent searching for information.

– Mitch Betts

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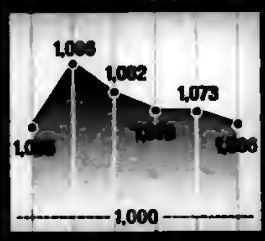
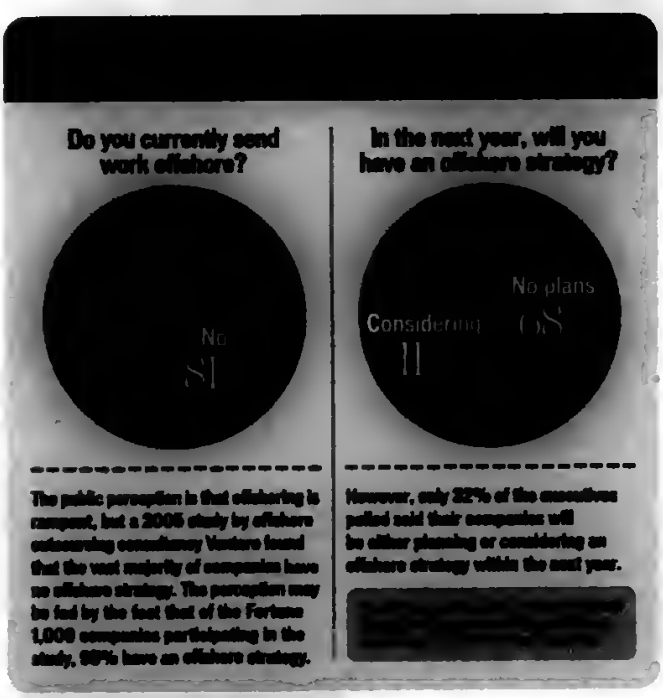


Career Watch


Do you currently send work offshore?
No
51
In the next year, will you have an offshore strategy?
No plans
Considering
11
The public perception is that offshoring is rampant, but a 2005 study by offshore outsourcing consultancy Vantare found that the vast majority of companies have no offshore strategy. The perception may be fed by the fact that of the Fortune 1,000 companies participating in the study, 98% have an offshore strategy.
However, only 32% of the executives polled said their companies will be either planning or considering an offshore strategy within the next year.

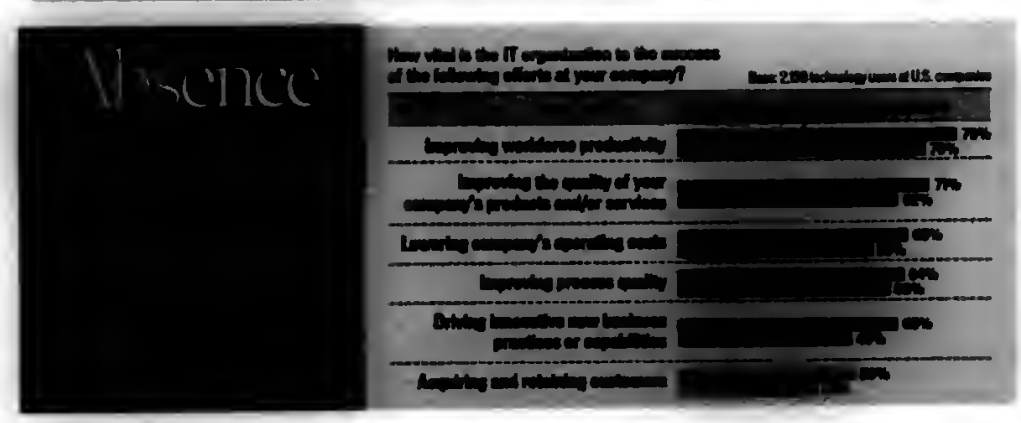
I have a background in business with a degree in business IT. I'm thinking of getting a master's degree, but I'm not sure if I should get an MBA or a master's in MIS. I want to be a business-technology leader. Which will be the better investment for me? The major constant for years to come will be change. You need to be adaptive, and your education and knowledge can play a key role. While highly technical skills will continue to be required in companies that specialize in creating technology, the vast majority of enterprises will need people who are able to understand the business and configure the technology to serve the business need. [Read about dual IT-business degrees in "2 for 1," QuickLink 55183.]

What are the steps I need to follow in order to become a successful business analyst? I have just been assigned this position and have a bachelor's degree in mass communication. There are many different ways to be a successful business analyst. Here's a list of what I believe to be the most fundamental:

- Have a genuine interest in the business objective; the issue to resolve is never the objective.
- Always remember that there are three dimensions: people, process and technology.
- Think holistically, and to end. Optimizing the overall result is what really matters.
- Think out of the box. Always get external opinions for multiple fresh perspectives.
- Measure and quantify results.
- Communicate, communicate, communicate.

I'm working on my bachelor's degree in IT, with a concentration in technology management. I also have an associate's degree in information systems. Right now, I'm looking for an internship/entry-level position, but I have an experience and have worked mainly in part-time cashier jobs. I have a 3.92 GPA. What can I do to get a job? Start networking with friends and family. They can help you learn about job openings and arrange for informational interviews within their companies. Informational interviews are invaluable for making contacts and understanding the kinds of jobs that are available. Another avenue would be to go to high-tech company Web sites and search for internships and co-op programs. Finally, join professional organizations to expand your network. Many have job listings that you could look into. Once you get an interview, be the most prepared candidate. Let the company know what you can do for it instead of what you did for someone else. Show that you understand its business and have thought about what you can contribute. Good luck to you! **55546**

Page compiled by Jamie Eckle.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Improving the quality of your company's products and/or services
71%
Lowering company's operating costs
69%
Improving process quality
64%
Driving innovative new business practices or capabilities
49%
Acquiring and retaining customers
39%

ThinkTank

BRAIN FOOD FOR IT EXECUTIVES

RFID Is Showing Up on Food, Tools And Casino Chips

A RECENT REPORT from Forrester Research Inc. says that eventually, the radio frequency identification market as we know it today will disappear. Why? RFID will move beyond the supply chain and simply become a sensor technology embedded in a wider variety of business processes, such as "predictive maintenance" and real-world market research.

For example, Northfield, Ill.-based Kraft Foods Inc. uses RFID-tagged containers to track the location and freshness of the ingredients it uses. A grocery retailer can use RFID-tagged shopping carts to monitor and analyze shopping patterns in the aisles. Several firms are using RFID chips to keep track of expensive tools that tend

GETTY IMAGES

to "walk off" construction job sites. Gaming Partners International Corp. in Las Vegas has already sold 3 million RFID-embedded gambling chips to casinos to fight counterfeiting.

Marsha Thomson, IT minister of the state of Victoria in Australia, returned from a trade fair in Japan predicting a world where sensors are everywhere. She says she saw RFID chips "the size of glitter" that could be sprinkled on enemy forces during warfare and used to track troop movements.

She also saw RFID used in fruit shipments. The chips contained information such as the fruit's country and farm of origin, batch number and use-by date. They also identified any chemicals it may have been treated with if it wasn't organically grown. **55600**

– Mitch Betts and Michael Crawford (Computerworld Australia)

Best Bits

The most useful parts of recent business and IT management books

THE BOOK: **Thinking for a Living: How to Get Better Performance and Results From Knowledge Workers,** by Thomas H. Davenport *(Harvard Business School Press, 2005)*

They like to be left alone, you can't tell them what to do, and they don't particularly want to be managed. Their work is often unstructured – different every day. They tend to be mobile and work in collaborative networks. They're called knowledge workers, because their primary job is to create, distribute or apply knowledge. It's a class of workers – at least 25% of the U.S. workforce – that includes doctors, lawyers, strategists, managers, programmers and marketers.

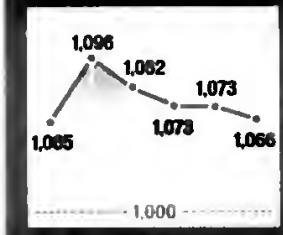
So far, corporate management has pretty much kept its paws off these think-for-a-living employees because Industrial Age productivity-enhancing techniques don't work. But Babson College IT and management professor Tom Davenport argues that the laissez-faire approach isn't good enough anymore. He joins management guru Peter Drucker in saying that the challenge of our times is to find ways to improve the performance and results of these knowledge workers, because they're the key to organizational growth and economic success. Knowledge workers are the ones who come up with new business strategies and products. They're also the most expensive employees in the company.

Davenport acknowledges that managing knowledge workers is like herding cats, but he asks us to imagine how much better our organizations would be if we could help them be more effective. And that's where IT comes in. This book has a whole chapter on how IT can foster collaboration, share knowledge, embed knowledge in work processes and provide role-specific portals to reduce the amount of time spent searching for information.

– Mitch Betts

WANT MORE BRIGHT IDEAS? *Visit our blog: www.computerworld.com/blogs/betts*

Index of Business IT Demand 2005



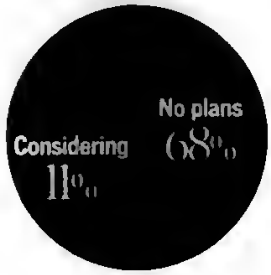
Career Watch

Offshoring: Not So Fast

Do you currently send work offshore?

The public perception is that offshoring is rampant, but a 2005 study by offshore outsourcing consultancy Ventoro found that the vast majority of companies have no offshore strategy. The perception may be fed by the fact that of the Fortune 1,000 companies participating in the study, 95% have an offshore strategy.

In the next year, will you have an offshore strategy?



However, only 32% of the executives polled said their companies will be either planning or considering an offshore strategy within the next year.

Base for both charts: 5,231 executives across North America and Europe who would generally be considered buyers of offshore outsourcing services.

I have a background in business with a degree in business IT. I'm thinking of getting a master's degree, but I'm not sure if I should get an MBA or a master's in MIS. I want to be a business-technology leader. Which will be the better investment for me? The major constant for years to come will be change. You need to be adaptive, and your education and knowledge can play a key role. While highly technical skills will continue to be required in companies that specialize in creating technology, the vast majority of enterprises will need people who are able to understand the business and configure the technology to serve the business need. [Read about dual IT-business degrees in "2 for 1," QuickLink 55183.]

What are the steps I need to follow in order to become a successful business analyst? I have just been assigned this position and have a bachelor's degree in mass communication. There are many different ways to be a successful business analyst. Here's a list of what I believe to be the most fundamental:

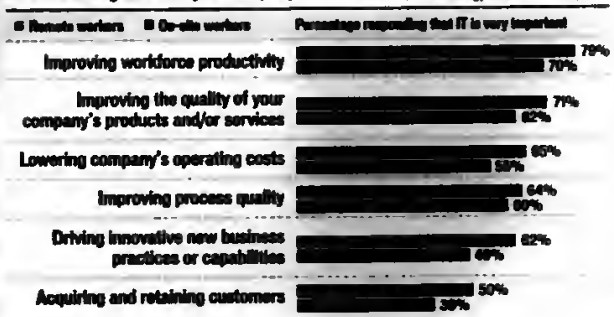
- Have a genuine interest in the business objective. The issue to resolve is never the objective.
- Always remember that there are three dimensions: people, process and technology.
- Think holistically, end to end. Optimizing the overall result is what really matters.
- Think out of the box. Always get external opinions for multiple fresh perspectives.
- Measure and quantify results.
- Communicate, communicate, communicate.

I'm working on my bachelor's degree in IT, with a concentration in technology management. I also have an associate's degree in information systems. Right now, I'm looking for an internship/entry-level position, but I have no experience and have worked mainly in part-time cashier jobs. I have a 3.92 GPA. What can I do to get a job? Start networking with friends and family. They can help you learn about job openings and arrange for informational interviews within their companies. Informational interviews are invaluable for making contacts and understanding the kinds of jobs that are available. Another avenue would be to go to high-tech company Web sites and search for internships and co-op programs. Finally, join professional organizations to expand your network. Many have job listings that you could look into. Once you get an interview, be the most prepared candidate. Let the company know what you can do for it instead of what you did for someone else. Show that you understand its business and have thought about what you can contribute. Good luck to you! **55546**

Page compiled by Jamie Eckle

How vital is the IT organization to the success of the following efforts at your company?

Base: 2,136 technology users at U.S. companies



Yahoo Inc. has added new search technology that crawls the Internet to help users of its HotJobs employment site find openings on sites across the Web. The technology not only scours Web sites for desired information, but it has learning capabilities, too, a Yahoo spokeswoman said. Users of HotJobs can still find advertised job listings on the employment site, which Yahoo acquired in 2002.

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countries. [5]General product availability of IBM TotalStorage DS4300 Express is expected to be 6/17/05. [6]EXP710 expansion unit is not included in the price. MB, GB and TB equal 1,000,000, 1,000,000,000 and 1,000,000,000,000 bytes, respectively, where referring to storage capacity. Actual storage capacity will vary based upon many factors and may be less than stated. Some numbers for storage capacity are given in native mode followed by capacity using data compression technology. IBM, eServer, POWER5, OpenPower, IBM Express Servers and Storage, DB2, POWER and IBM TotalStorage are trademarks or registered trademarks of International Business Machines Corporation in the United States and/or other countries. Linux is a registered trademark of Linus Torvalds in the United States and other countries. Linear Tape-Open, LTO and Ultrium are trademarks of Certance, HP and IBM in the U.S. and other countries. Other company, product and service names may be trademarks or service marks of others. ©2005 IBM Corporation. All rights reserved.

QUICK HITS

OPEN-SOURCE: PLUSES, MINUSES

What are the biggest benefits of open-source software?

Low acquisition costs	65%
Low total cost of ownership	39%
Hardware choice	38%
Better security	38%
Software choice	37%
Familiar to developers	25%
Higher quality	19%
Other	10%

What are your concerns about open-source?

Lack of support	60%
Product immaturity	42%
Lack of applications	38%
Lack of skills	38%
Unexpected license costs	33%
Fear that the open-source community will splinter	20%
Security	20%
Fear of lawsuits	19%
Other	5%
None	5%

Base: 66 IT decision-makers using or planning to use open-source in the next 12 months. Multiple responses accepted.

What has been your biggest disappointment with open-source?

- No disappointment
- Management more complex than expected
- Expected savings haven't materialized
- Quality not as expected
- Has raised complexity of environment
- Don't know
- Other

Base: 66 IT decision-makers using or planning to use open-source in the next 12 months. Percentage doesn't equal 100 because of rounding.

SOURCE: FORRESTER RESEARCH INC., JUNE 2005

PAUL GLEN

Killing Zombies

DOES YOUR DEPARTMENT host a congregation of the undead? Every so often, I find zombies lurking in the conference rooms and kitchens of IT departments, harassing managers and staff. The undead are remarkably resilient. They are the bane of the managers they haunt, but they are often of the managers' own making.

Let me explain. One of my clients, the CEO of a midsize software company, recently asked me what she should do with a bizarre set of recommendations that she had received from a committee of employees. The group had presented her with a hodgepodge of proposals (read: demands) ranging from suggestions about product strategy to requests for enhancements to the employee benefits packages and ideas about completely reorganizing the company.

As she talked about the document, I could see that she was more than just mildly frustrated by the incoherence of the ideas. She talked on and on about how much it would cost to implement the suggestions, how little they would benefit the company and how they contradicted one another. She seemed to be taking the list as a personal assault.

"Do you know what prompted them to make these proposals?" I asked.

"No. It's not what they are there for," she replied.

I finally asked her to tell me about the committee that had submitted the recommendations.

The group had been assembled to implement a merger of two support operations. Over the period of a year, they had studied, made recommendations about and overseen the combination of the two groups. Apparently, they had done an excellent job of fulfilling their original mandate.

"So how did they get from that mandate to those recommendations?" I asked.

"I don't know," she replied.

"So why do they still exist?" I asked her.

"I don't know." She responded through gritted teeth.

There it was. She had an undead committee, an assembled group of energetic, talented and well-meaning people roaming the building looking for a purpose. Once they had gone to all the trouble of learning to work together as a cross-functional team, they apparently decided to move on and tackle bigger and better things.

This kind of problem isn't restricted to small groups.

In the U.S. government, there's a classic example. The Rural Electrification Administration (REA) was formed in 1935 with the purpose of bringing electricity to the populations of remote agricultural areas. The program was a tremendous success, and within 15 years, more than 90% of farms had power, up from only 10% when the program began.

But did the REA gracefully close its doors after its core mission was accomplished in the 1950s? Of course not. In the 1980s, it still existed, having found new things to do. Unable to kill it, the government eventually merged it into another agency.

The undead live on.

Do you have one of those undead groups in your department?

They are relatively easy to spot. Here's how: For every assemblage of people in your organization, ask a few key questions:

- What are their three most important goals?
- Has this group outlived its original mission?
- If it has outlived its original mission, has management assigned it a new mission?

If any group lacks clearly articulated goals supported by senior management, you may have a pack of zombies on your hands.

You can do one of two things:

- Throw a party. Congratulate the group on its initial success and then disband it.
- Give the group a new purpose. Find an appropriate and useful new job for the group and monitor the scope of its work, just as you would any project.

If neither of those solutions works, move on to more drastic action:

- Ensure that the key players in the group have so much other high-priority work to do that they simply can't devote time to the haunting.
- Fire some people — but only as a last resort.

So back to my client. "What did you do to disband the group after its work was done?" I asked her.

"Nothing," she said, with a look of realization. "I assumed that they would just stop meeting." She suddenly understood that she had a zombie problem and that it was one of her own making. 55467

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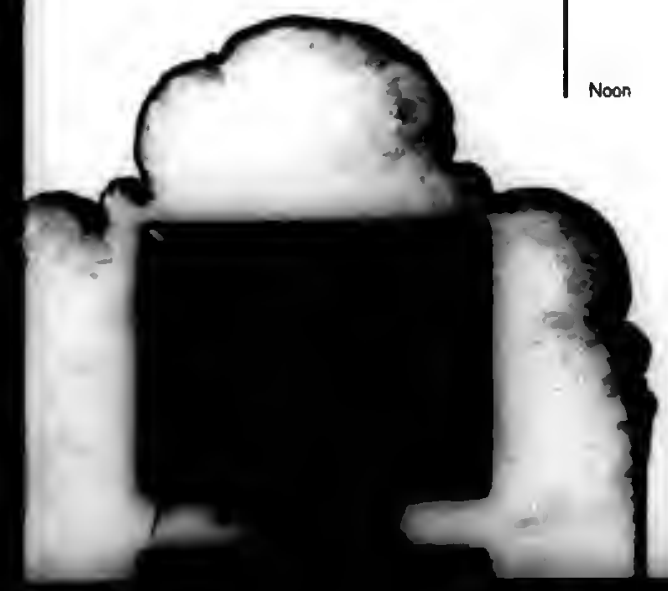

Beyond Business Intelligence: Using Enterprise Analytics to Drive Fact-Based Decisions

New York, New York · August 9, 2005

New York Marriott Financial Center · 85 West Street · New York City

8:00am to 8:30am	Registration and Networking Breakfast
8:30am to 8:40am	**Introduction and Overview** Julia King, Executive Editor, Events, and National Correspondent, Computerworld
8:40am to 9:10am	**Trends in Enterprise Analytics: An Industry Analyst's Overview** Keith Gile, Principal Analyst, Forrester Research
9:10am to 9:40am	**Case Study: The Nature Conservancy** Connor Baker, Director of Business Information, The Nature Conservancy
9:40am to 10:30am	**Transforming Enterprise Data Into Actionable Business Intelligence** Rob Stephens, Director of Technology Strategy, SAS Michael Tillema, Business Intelligence Strategist, Intel
10:30am to 10:45am	Refreshment and Networking Break
10:45am to 11:15am	**Case Study: APEX Management Group** Jody Porrazzo, Ph.D., Director of Econometric Risk Strategy, APEX Management Group
11:15am to Noon	**Panel Discussion – From Gut Feel to Fact-Based Decisions: Real-Life Business, Political and Technology Lessons Learned on the Front Lines of Enterprise Analytics** Moderator: Julia King, Executive Editor, Events, and National Correspondent, Computerworld Panelists: - Connor Baker, Director of Business Information, The Nature Conservancy - Jody Porrazzo, Ph.D., Director of Econometric Risk Strategy, APEX Management Group - Keith Gile, Principal Analyst, Forrester Research - Rob Stephens, Director of Technology Strategy, SAS - Michael Tillema, Business Intelligence Strategist, Intel
Noon	Luncheon (optional)

Selected speakers include:

Connor Baker
Director of Business Information,
The Nature Conservancy

Jody Porrazzo, Ph.D.
Director of Econometric Risk Strategy,
APEX Management Group

Keith Gile
Principal Analyst,
Forrester Research

Rob Stephens
Director of Technology Strategy, SAS

Michael Tillema
Business Intelligence Strategist, Intel

Julia King
Executive Editor, Events, and National Correspondent
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Consultant Sees 'Disconnect' On Software Licensing Plans

BY THOMAS HOFFMAN

In June, PricewaterhouseCoopers published a report on software licensing that was based on interviews with 112 CIOs and chief financial officers at U.S. technology vendors. Among the findings: Half of the companies expect to lose revenue this year as a result of corporate customers improperly reporting the amount of licensed software they use. **David Marston,** *a PwC partner who leads the consulting firm's U.S. licensing management practice in San Francisco, spoke with* Computerworld *recently about some of the issues raised by the report.*

Are software vendors moving to new licensing models? And are IT executives clamoring for them? There's a disconnect there somewhere between what enterprise customers are asking for in terms of flexible licensing models, and models that vendors have tried that didn't catch on. There is a lot of dialogue in the industry about how to address that, but I honestly don't see [vendors] making a mad rush to the door to change licensing models.

What are users saying? Do they want to see new licensing models introduced into the market? A lot of licensees we speak to would like to have [a contract] that would provide them [with] more flexibility and ease of compliance. Most of these agreements are structured by CPU or by the number of end users; 99.9% of the CIOs we talk to want to be in compliance, especially [post-Sarbanes-Oxley Act] and in the environment we're living in. But they're resource- and budget-constrained, so it's difficult for them to stay in compliance. They have complex data-center environments, multiple locations and IT managers who aren't close to the terms and conditions.

CIOs also complain about having to wade through 100-page software contracts. What are the chances of software vendors developing more simplified and standardized contract language? I can't envision that ever happening. Even within the same software company, contracts vary — and when you get down to negotiating, terms and conditions change.

If you look five years or more down the road and you get to a place where industry consolidation leads to five or 10 major software companies, and you get past the major antitrust issues, maybe you could get vendors to agree to a standard contract form. But you'll still have negotiations galore. Nobody walks into a car dealer and pays the full sticker price. It's the same with software contracts.

Has the Business Software Alliance become more aggressive about conducting audits of corporate software usage? I don't know if the BSA has been more or less aggressive on software audits.

But I have seen an increasing trend among enterprise customers toward conducting self-assessments. Whether it's a reaction to a software vendor sending a compliance letter and/or a factor of the Section 404 work related to Sarbanes-Oxley, I'm not sure. But companies are saying that their software asset management controls aren't as robust as they thought they were, so they're opting more towards doing self-assessments. I do see more self-assessments than I did a year ago; that's a fact. **55047**

Continued from page 1

ERP Rollout

February, and officials are now conducting an assessment of the project at the school's flagship campus in Madison, according to Don Mash, executive vice president of the University of Wisconsin system.

The assessment is due to be completed next month, said Mash, who since March has served as chairman of the steering committee that's overseeing the ERP effort. "We don't know where all this will come out," he noted.

The project has been in the works for the past six years. But a risk assessment report that was submitted to the university in February found that too much of that time — three years — was spent on advance planning. The report, written by an outside consultant, cited other problems, including institutional resistance to Lawson's software on the Madison campus, where PeopleSoft financial and student information software is already used.

In addition, the report noted that end users were given technical positions for which they weren't trained and that the project's software testing plan wasn't followed properly and eventually became "completely disregarded."

A large amount of software customization work, which involved 251 programs and eight major bolt-on applications that were being added to Lawson's software, also complicated the project, the report said.

The problems could push the price tag for the Appointment, Payroll and Benefits System (APBS) to between $55 million and $62 million through 2009, according to the report. It said large shortfalls are likely, with a total of only about $34 million expected to be available for the project.

Mash acknowledged last week that the rollout of APBS across the school's 26 campuses proved complicated, and he said that the planning and project management deficiencies and a lack of cooperation between the project team and end users became problematic.

"We aren't as far along as we'd hoped and spent more money than we had originally acknowledged we'd need," Mash said. "What we've spent and the amount of time it's taken, in the big scheme of things, are really not out of the ordinary. But to the general public, after spending $25 million and there's not a product, you've got a problem."

Although the school's mainframe software can still handle basic functions, it's expected to become obsolete within three years, Mash said. University officials want to replace it with a system that's easier to use, more efficient and less costly to operate. But, he added, they're waiting until the assessment is finished before deciding how to proceed.

One option involves swapping out Lawson's applications for PeopleSoft payroll and human resources software, which is now owned by Oracle Corp. However, Mash sees that as unlikely. "Whether or not we'll start with another company isn't known, but it would be a stretch to do that," he said.

The university is Lawson's largest client in the higher education market, said Dan Schmidtke, a strategic account manager at the St. Paul, Minn.-based vendor. He said that the problems with the APBS project stem from issues beyond Lawson's control.

"There are no material issues with Lawson's products or services," Schmidtke said. "We have a good, strong relationship with UW and look forward to their go-live."

Cost overruns for a human resources and payroll system aren't unusual, although outright failure is, said Paul Hamerman, an analyst at Forrester Research Inc. No matter which vendor is involved, he added, there will be significant complexity for a rollout at any academic institution with multiple campuses and a variety of compensation policies and practices. **55060**

FIGHTING SCOPE CREEP

A school district in Tampa, Fla., cautiously readies its Lawson ERP implementation.

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FRANK HAYES ■ FRANKLY SPEAKING

Reinventing EHR

HOW WOULD YOU reinvent part of the software industry? Back in March, I suggested that Medicare — the 800-pound gorilla of health care — could break the logjam in electronic health records by requiring EHR for all doctors who do business with it, much like Wal-Mart is forcing its suppliers to adopt RFID [QuickLink 52932].

This month, Medicare is doing something even more dramatic: It's giving away free EHR software that's customized for private medical practices. In a single stroke, Medicare is setting de facto standards for EHR and making EHR more affordable.

And shaking up the whole EHR software business in the process.

If you've been following the nonprogress of EHR, you already know that individual doctors are the ones who haven't converted patient health records from paper to computerized systems. Hospitals have made the transition over the past decade, spurred by laws such as HIPAA.

But doctors in private practice have dragged their feet, mainly grumbling about cost. And at a typical price tag of $20,000 per doctor for commercial EHR systems, that's no surprise.

Medicare's solution? Take an existing EHR system called VistA, scale it down and make it easier to install, then rename it VistA-Office EHR and give it away to anyone who wants it.

But wait, you ask, where does Medicare get off giving away free software and undercutting EHR vendors? And where did Medicare get this software it's giving away, anyhow?

Hang on — this gets complicated. VistA comes from the Department of Veterans Affairs, which developed it in 1996 and has been running VA health care facilities with it ever since. And VistA is actually just the client/server version of the VA's Decentralized Hospital Computer Program, which the agency has been using since 1985 in 1,300 VA facilities to maintain health records of 5 million veterans. That's what we call "mature."

And because it's software developed with taxpayer dollars, it's in the public domain. Anyone can get a copy of VistA under the Freedom of Information Act and then make as many copies as he likes. It's sort of like open-source software, but without any open-source license.

Wait, there's more. VistA was built on a database engine named MUMPS (now called just M). VistA is free, but M requires a license fee. VistA has also been rewritten as an open-source version called OpenVista, which runs on Linux and uses its own open-source version of MUMPS, so there's no license fee.

Medicare's VistA-Office is also in the public domain, requires M and runs on Windows. That's what doctors can get their hands on starting this month. They'll have to pay license fees for M and a few other modules, but that's only about one-tenth of the cost of a commercial EHR license.

So, what about commercial EHR vendors? They haven't actually lost any sales, since the 70% of medical practices without EHR weren't buying the high-priced spread anyway.

But because VistA-Office is public domain software, commercial vendors can get it free, enhance it, copyright their improvements, then sell it for whatever price the market will bear, creating their own low-end proprietary products. And they can tweak their high-end products to make sure they'll interoperate with VistA-based EHR.

Result: Instead of pricey incompatibility, we could end up just a few years from now with public domain, open-source, and low- and high-end proprietary EHR products that all work together — and a lot more doctors using EHR.

Of course, that's what the Medicare people have in mind — to get doctors to use EHR. They're not trying to reinvent the EHR software business.

But don't be surprised when that's what happens. 55837

Running With Scissors

Consultant pilot fish is hard at work fabricating network cables when site manager bursts in. "Our whole network is down!" manager howls. "Is this something you – or . . . " It takes fish a second to realize what manager is seeing: "I'm sitting there with a length of cable in one hand and a pair of scissors in the other," fish says. "Turns out it was a blown breaker. But I'll never forget the look on his face."

SHARK TANK

Aha!

My laptop's docking settings have changed, and my e-mail isn't working, user complains. IT pilot fish checks it out and notices right away that it's not a company laptop. "The user said the laptop was one from home that he brought permanently," explains fish. "He liked it better, so he brought it into work to use."

Oh, We'll Get to It

This head honcho dubs Monday "Power-on Monday" – that's the day he reminds users to turn their PCs running overnight so they can be remotely patched and anti-malwared. "On this particular Power-on Monday, one of these users calls up after he sends out his last reminder," reports a pilot fish on the helpdesk. "She asks, 'Should I leave the door unlocked so IT can get to the PC?'"

Automation

[illegible]

[illegible] or shredded," fish says. But one user has a problem: "I don't always have time to pick up my reports from the printer. Is there any way I can set up my PC so I can send my documents directly to the shredder?"

Rating Amelie

[illegible] to correspond with the closeness upon that elevates [illegible] work PC, and CIO pilot fish takes immediate action when user suggests it's sexual harassment. "The problem was the smaller-sized, which no one [illegible]," fish explains. "Next day, user responds 'Titan Amelie is great – we want this standard.'"

Still 'Me'

[illegible]

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